Appendix J

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

Table J1 *Cumulative Statistics on Exceedances*

Monitoring Parameters	Action/Limit Level	Total No. recorded in this reporting quarter	Total No. recorded since Contract commencement
1-Hr TSP	Action	4	91
	Limit	0	6
24-Hr TSP	Action	1	10
	Limit	0	4
Water Quality	Action	2	22
	Limit	0	1
Impact Dolphin Monitoring	Action	0	11
	Limit	1	15

Table J2 *Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions*

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Period (March to May 2019)	0	0	0
Total No. received since Contract commencement	16	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	3 April 2019

ERM

Dear Sir or Madam,

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

0212330_27March2019_1hrTSP_Station ASR1

One Action Level Exceedance was recorded on 27 March 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

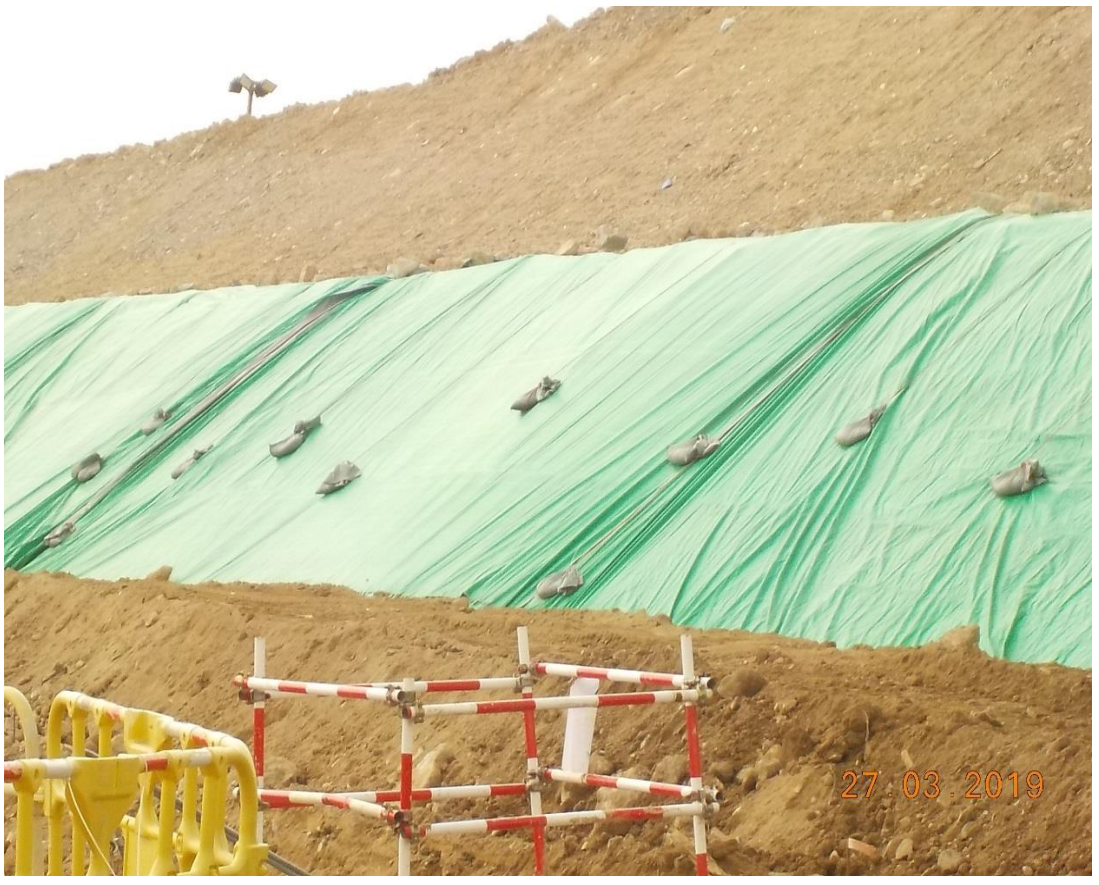
Log No.	**0212330_27March2019_1hrTSP_Station ASR1** **[Total No. of Exceedances = 1]**	
Date	27 March 2019 (Measured) 3 April 2019 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP	
Action Levels	24-hr TSP (µg/m³)	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP (µg/m³)	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP (µg/m³)	500
	24-hr TSP (µg/m³)	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR1 (412 µg/m3) during 1333 – 1433 hrs.	
Works Undertaken (at the time of monitoring event)	On 27 March 2019, TBM tunnel works was carried out at tunnel portion and RC structure construction was carried out at Portion N-A.	
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, the majority of construction works on 27 March 2019 was TBM tunnel works and RC structure construction at Portion N-A. During the period of the land-based construction works, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual (e.g. water spraying on exposed soil within the Project site and associated works areas; exposed soil covered by tarpaulin sheets). • 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. • Recorded wind speed during the works period was zero. Dust generated from the construction works, if any, will be localized within the site area and was not likely to be dispersed to station ASR1. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	Site inspection was carried out on 27 March 2019. Dust suppression measures were properly implemented. Water spraying was applied to prevent dust. Exposed soil was covered by tarpaulin sheets to prevent dust. Photos are provided in Annex A. 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.

ERM

Annex A Photos taken during site inspection

*Note: Photos taken on 27/3/2019



Exposed soil was covered by tarpaulin sheet to prevent dust. (Works Area Portion N-C)

Water spraying was applied at the main haul road to prevent dust. (Works Area Portion N-A)

Air quality monitoring results on 27/3/2019								
Project	Works	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	27/3/2019	AQMS1	Sunny	13:44	1-hour TSP	136	ug/m3
TMCLKL	HY/2012/08	27/3/2019	AQMS1	Sunny	14:46	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	27/3/2019	AQMS1	Sunny	15:48	1-hour TSP	114	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR1	Sunny	13:33	1-hour TSP	412	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR1	Sunny	14:35	1-hour TSP	213	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR1	Sunny	15:37	1-hour TSP	274	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR10	Sunny	13:01	1-hour TSP	86	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR10	Sunny	14:03	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR10	Sunny	15:05	1-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR5	Sunny	13:22	1-hour TSP	121	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR5	Sunny	14:24	1-hour TSP	93	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR5	Sunny	15:26	1-hour TSP	102	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR6	Sunny	13:11	1-hour TSP	110	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR6	Sunny	14:13	1-hour TSP	88	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR6	Sunny	15:15	1-hour TSP	76	ug/m3
TMCLKL	HY/2012/08	27/3/2019	AQMS1	Sunny	16:50	24-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR1	Sunny	16:39	24-hour TSP	129	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR10	Sunny	16:07	24-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR5	Sunny	16:28	24-hour TSP	108	ug/m3
TMCLKL	HY/2012/08	27/3/2019	ASR6	Sunny	16:17	24-hour TSP	73	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)**
19/03/27	0:00	0.4	95
19/03/27	1:00	0	-
19/03/27	2:00	0.4	68
19/03/27	3:00	0	-
19/03/27	4:00	0	-
19/03/27	5:00	0	-
19/03/27	6:00	0	-
19/03/27	7:00	1.3	96
19/03/27	8:00	1.3	101
19/03/27	9:00	0	-
19/03/27	10:00	0.4	109
19/03/27	11:00	0	-
19/03/27	12:00	0	-
19/03/27	13:00	0	-
19/03/27	14:00	0	-
19/03/27	15:00	0	-
19/03/27	16:00	0	-
19/03/27	17:00	0	-
19/03/27	18:00	0	-
19/03/27	19:00	0	-
19/03/27	20:00	0	-
19/03/27	21:00	0	-
19/03/27	22:00	0	-
19/03/27	23:00	0	-

Dragages Hong Kong / Dragages - Bouygues Joint Venture 寶嘉 - 布依格聯營	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: 25 Mar 2019 to 至 31 Mar 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。

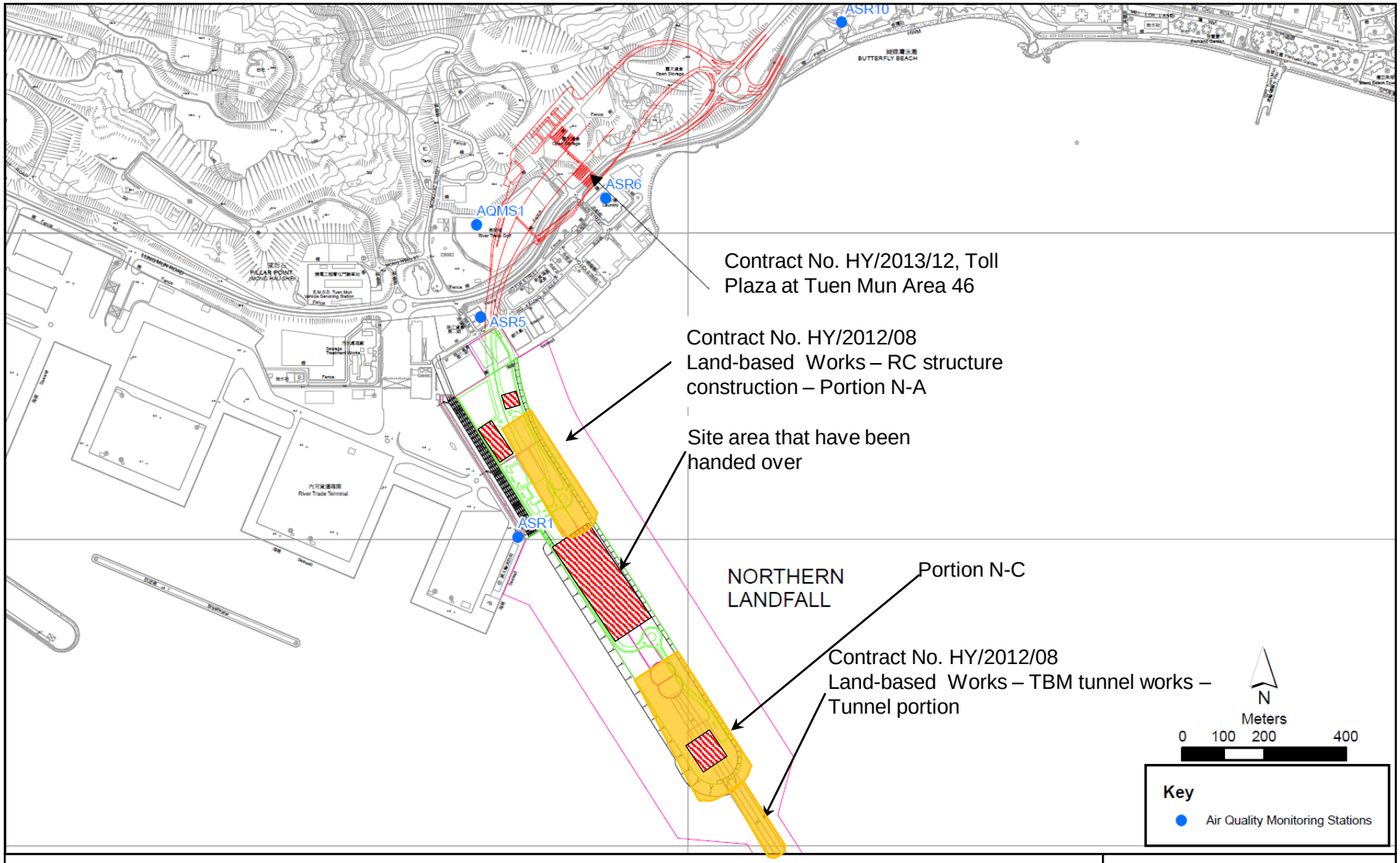


Figure 1

Indicative Construction Works Area on 27 March 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

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	9 April 2019

ERM

Dear Sir or Madam,

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

0212330_30March2019_1hrTSP_Station ASR1

One Action Level Exceedance was recorded on 30 March 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.	**0212330_30March2019_1hrTSP_Station ASR1** **[Total No. of Exceedances = 1]**	
Date	30 March 2019 (Measured) 9 April 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 (374 µg/m3) during 1048 – 1148 hrs.	
Works Undertaken (at the time of monitoring event)	On 30 March 2019, TBM tunnel works was carried out at tunnel portion and RC structure construction was carried out at Portion N-A.	
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, the majority of construction works on 30 March 2019 was TBM tunnel works and RC structure construction at Portion N-A. During the period of the land-based construction works, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual (e.g. water spraying on exposed soil within the Project site and associated works areas; exposed soil covered by tarpaulin sheets). • 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. • With reference to the recorded wind direction (ranged between 110^o and 114^o, blowing from an easterly direction) and wind speed (1.8 m/s) during the works period, Stations ASR1 are located downstream to the construction works at Portion N-A. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	According to the photo record provided by the Contractor, dust suppression measures were properly implemented. Water spraying was applied to prevent dust. Exposed soil was covered by tarpaulin sheets to prevent dust. Photos are provided in Annex A. 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.

ERM

Annex A Photos taken during site inspection

*Note: Photos taken on 30/3/2019

Exposed soil was covered by tarpaulin sheet to prevent dust. (Works Area Portion N-C)

Water spraying was applied at the main haul road to prevent dust. (Works Area Portion N-A)

Air quality monitoring results on 30/3/2019								
Project	Works	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	30/3/2019	AQMS1	Cloudy	8:55	1-hour TSP	56	ug/m3
TMCLKL	HY/2012/08	30/3/2019	AQMS1	Cloudy	9:57	1-hour TSP	128	ug/m3
TMCLKL	HY/2012/08	30/3/2019	AQMS1	Cloudy	10:59	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR1	Cloudy	8:44	1-hour TSP	34	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR1	Cloudy	9:46	1-hour TSP	122	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR1	Cloudy	10:48	1-hour TSP	374	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR10	Cloudy	8:10	1-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR10	Cloudy	9:12	1-hour TSP	32	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR10	Cloudy	10:14	1-hour TSP	56	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR5	Cloudy	8:32	1-hour TSP	142	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR5	Cloudy	9:34	1-hour TSP	192	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR5	Cloudy	10:36	1-hour TSP	121	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR6	Cloudy	8:20	1-hour TSP	86	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR6	Cloudy	9:22	1-hour TSP	124	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR6	Cloudy	10:24	1-hour TSP	92	ug/m3
TMCLKL	HY/2012/08	30/3/2019	AQMS1	Cloudy	12:01	24-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR1	Cloudy	11:50	24-hour TSP	186	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR10	Cloudy	11:16	24-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR5	Cloudy	11:38	24-hour TSP	69	ug/m3
TMCLKL	HY/2012/08	30/3/2019	ASR6	Cloudy	11:26	24-hour TSP	66	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)**
19/03/30	0:00	0	-
19/03/30	1:00	0	-
19/03/30	2:00	0	-
19/03/30	3:00	0	-
19/03/30	4:00	0	-
19/03/30	5:00	0	-
19/03/30	6:00	0	-
19/03/30	7:00	0	-
19/03/30	8:00	0	-
19/03/30	9:00	0	-
19/03/30	10:00	1.8	110
19/03/30	11:00	1.8	114
19/03/30	12:00	0.9	119
19/03/30	13:00	2.2	105
19/03/30	14:00	0.9	113
19/03/30	15:00	2.7	108
19/03/30	16:00	2.7	109
19/03/30	17:00	2.2	103
19/03/30	18:00	1.8	121
19/03/30	19:00	1.3	120
19/03/30	20:00	0	-
19/03/30	21:00	0.4	101
19/03/30	22:00	0.4	83
19/03/30	23:00	0.4	81

香港寶嘉 Dragages Hong Kong / Bouygues Construction group — Dragages - Bouygues Joint Venture 寶嘉 - 布依格聯營	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: 25 Mar 2019 to 至 31 Mar 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。

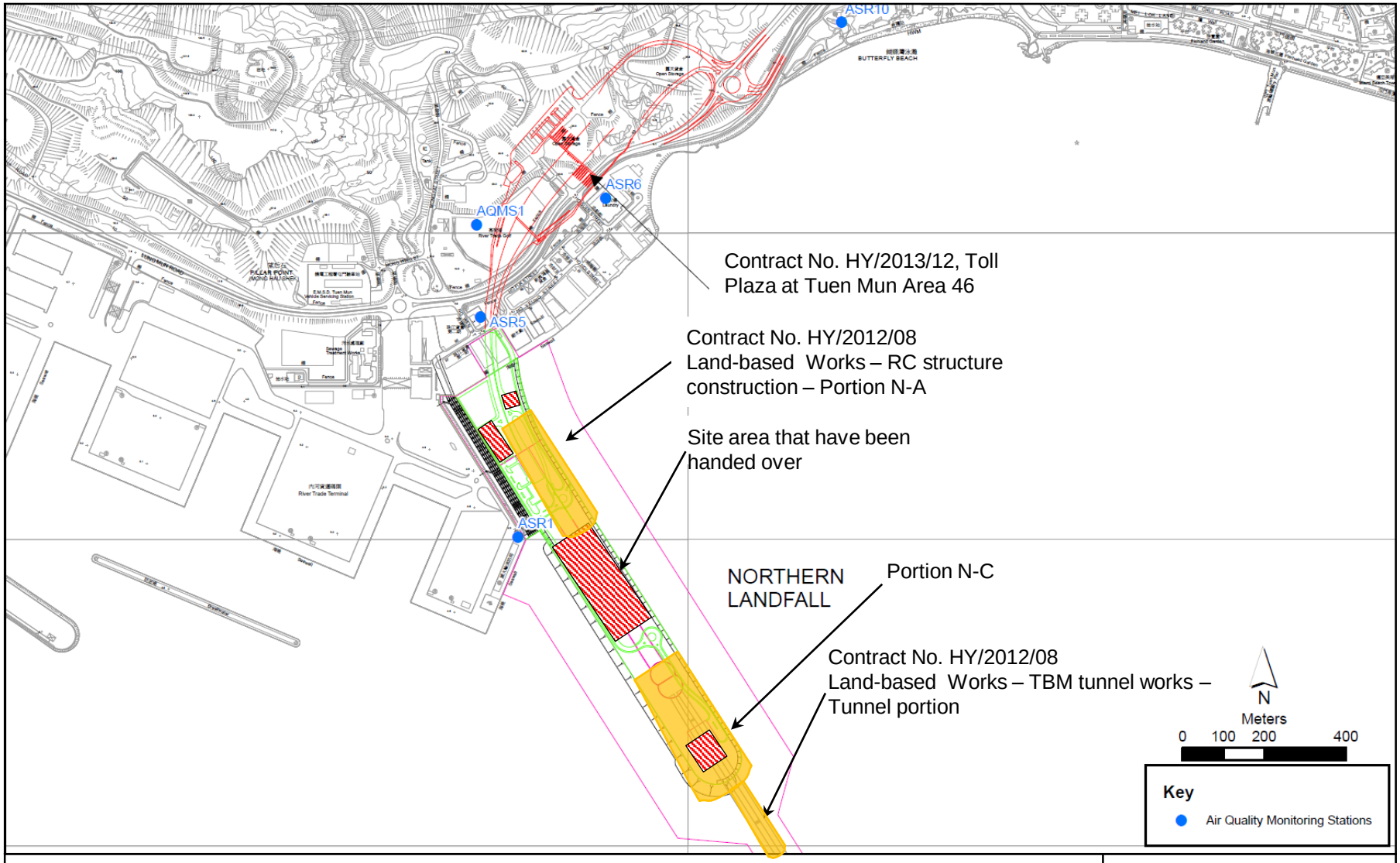


Figure 1

Indicative Construction Works Area on 30 March 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

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	27 May 2019

ERM

Dear Sir or Madam,

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

0212330_11May2019_1hrTSP_Station ASR1

One Action Level Exceedance was recorded on 11 May 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.	**0212330_11May2019_1hrTSP_Station ASR1** **[Total No. of Exceedances = 1]**	
Date	11 May 2019 (Measured) 24 May 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/m³)	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP (µg/m³)	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP (µg/m³)	500
	24-hr TSP (µg/m³)	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR1 (339 µg/m3) during 0903 – 1003 hrs.	
Works Undertaken (at the time of monitoring event)	On 11 May 2019, TBM tunnel works was carried out at tunnel portion and RC structure construction was carried out at Portion N-A.	
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, the majority of construction works on 11 May 2019 was TBM tunnel works and RC structure construction at Portion N-A. During the period of the land-based construction works, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual (e.g. water spraying on main haul road within the Project site and associated works areas; exposed soil covered by tarpaulin sheets). • 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. Photo record is provided in Annex A. • With reference to the recorded wind direction (ranged between 95° and 98°, blowing from an easterly direction) and wind speed (2.7 m/s) during the exceedance hour, Stations ASR1 are located downstream to the construction works at Portion N-A. However, the exceedance was only recorded in the first hour of 1-hour TSP monitoring with the same construction works and dust mitigation measures being carried out. Based on the above, the exceedance is unlikely to be due to this Contract.	

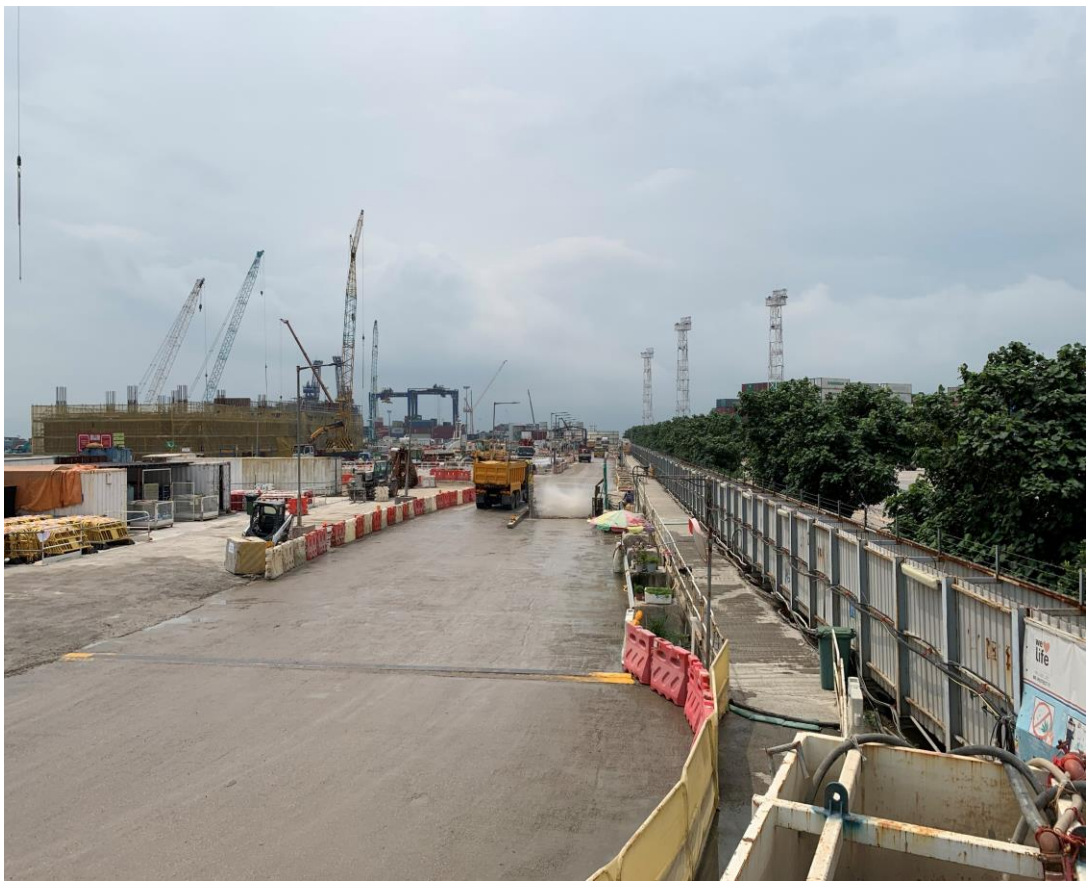
Actions Taken / To Be Taken	According to the photo record provided by the Contractor, dust suppression measures were properly implemented. Water spraying was applied to prevent dust. Exposed soil was covered by tarpaulin sheets to prevent dust. Photos are provided in Annex A. The Contractor has been 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.

ERM

Annex A Photos provided by the Contractor

*Note: Photos taken on 11/5/2019

Exposed soil was covered by tarpaulin sheet to prevent dust. (Works Area Portion N-C)



Water spraying was applied at the main haul road to prevent dust. (Works Area Portion N-A)

Air quality monitoring results on 11/5/2019								
Project	Works	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	11/5/2019	AQMS1	Sunny	9:15	1-hour TSP	95	ug/m3
TMCLKL	HY/2012/08	11/5/2019	AQMS1	Sunny	10:17	1-hour TSP	105	ug/m3
TMCLKL	HY/2012/08	11/5/2019	AQMS1	Sunny	11:19	1-hour TSP	99	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR1	Sunny	9:03	1-hour TSP	339	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR1	Sunny	10:05	1-hour TSP	129	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR1	Sunny	11:07	1-hour TSP	122	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR10	Sunny	8:30	1-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR10	Sunny	9:32	1-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR10	Sunny	10:34	1-hour TSP	60	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR5	Sunny	8:52	1-hour TSP	126	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR5	Sunny	9:54	1-hour TSP	124	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR5	Sunny	10:56	1-hour TSP	194	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR6	Sunny	8:41	1-hour TSP	90	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR6	Sunny	9:43	1-hour TSP	85	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR6	Sunny	10:45	1-hour TSP	137	ug/m3
TMCLKL	HY/2012/08	11/5/2019	AQMS1	Sunny	12:21	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR1	Sunny	12:09	24-hour TSP	87	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR10	Sunny	11:36	24-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR5	Sunny	11:58	24-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	11/5/2019	ASR6	Sunny	11:47	24-hour TSP	49	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)**
19/05/11	0:00	0.9	14
19/05/11	1:00	0	-
19/05/11	2:00	0	-
19/05/11	3:00	0.9	46
19/05/11	4:00	0.4	49
19/05/11	5:00	0.4	100
19/05/11	6:00	0.4	39
19/05/11	7:00	0.9	70
19/05/11	8:00	1.8	42
19/05/11	9:00	2.7	98
19/05/11	10:00	2.7	95
19/05/11	11:00	1.8	122
19/05/11	12:00	1.3	218
19/05/11	13:00	1.3	275
19/05/11	14:00	2.2	191
19/05/11	15:00	2.2	194
19/05/11	16:00	2.2	196
19/05/11	17:00	2.2	191
19/05/11	18:00	0.9	84
19/05/11	19:00	2.2	39
19/05/11	20:00	2.2	49
19/05/11	21:00	2.2	60
19/05/11	22:00	3.1	95
19/05/11	23:00	3.1	67

Drogages - Bouygues Joint Venture 寶嘉 - 布依格聯營	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: 06 May 2019 to 至 12 May 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	✓	✓	✓	✓	✓	✓	✓

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。

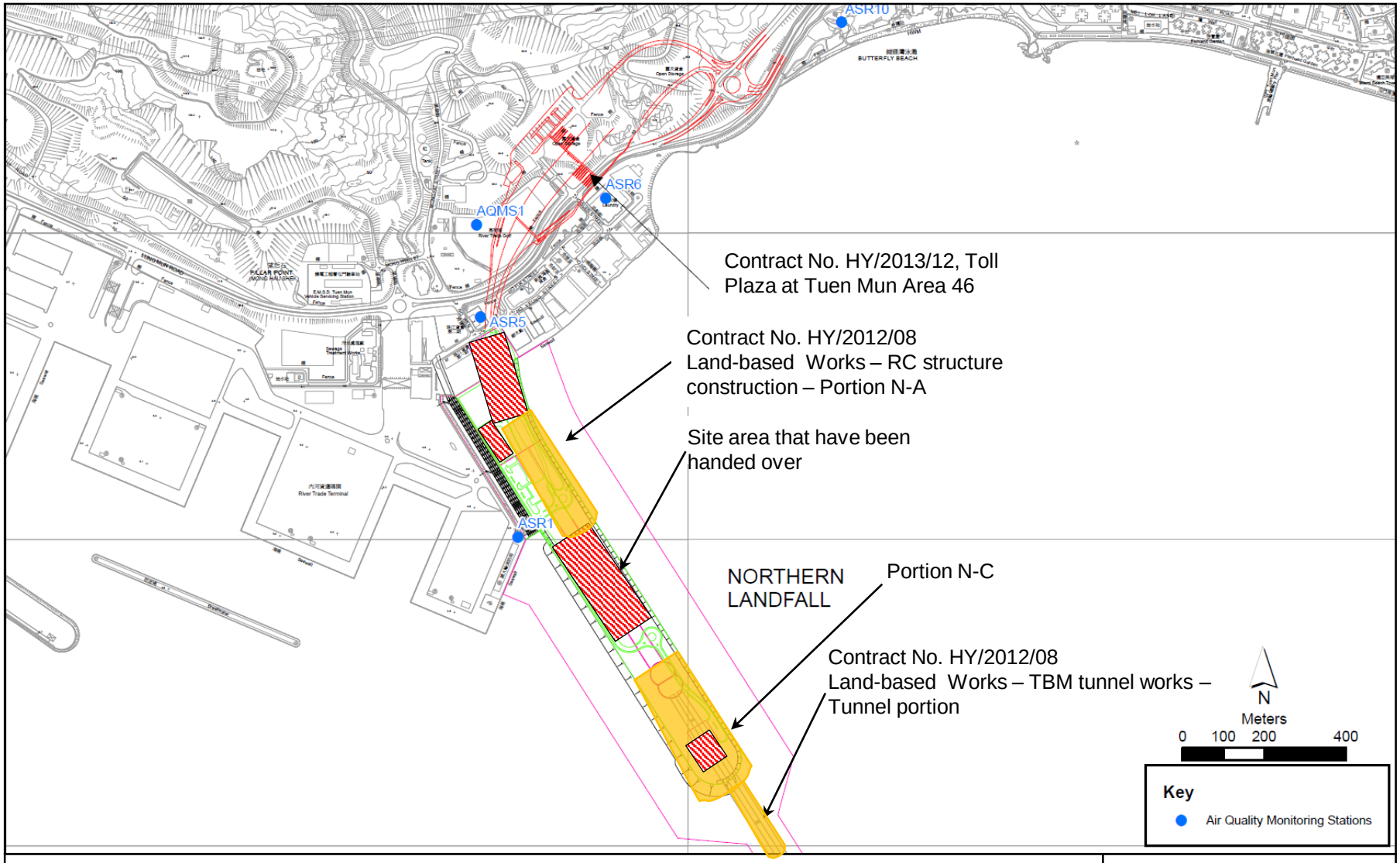


Figure 1

Indicative Construction Works Area on 11 May 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

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	3 June 2019

ERM

Dear Sir or Madam,

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

0212330_23May2019_1hrTSP_Station ASR1
0212330_23May2019_24hrTSP_Station ASR1

Two Action Level Exceedances were recorded on 23 May 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.	**0212330_23May2019_1hrTSP_Station ASR1** **0212330_23May2019_24hrTSP_Station ASR1** **[Total No. of Exceedances = 2]**	
Date	23 May 2019 (Measured) 2 June 2019 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP, 24-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 (408 µg/m3) during 1344 – 1444 hrs. Action Level Exceedance for 24-hr TSP is observed at ASR1 (217 µg/m3) during 1650 – 1650 hrs.	
Works Undertaken (at the time of monitoring event)	On 23 and 24 May 2019, Demolition of Amenities and Workshop and RC structure construction was carried out at Portion N-A.	
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, the majority of construction works on 23 and 24 May 2019 was Demolition of Amenities and Workshop and RC structure construction at Portion N-A. During the period of the land-based construction works, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual (e.g. water spraying on exposed soil within the Project site and associated works areas). • With reference to the recorded wind direction (ranged between 84^o and 105^o, blowing from an easterly direction) and wind speed (ranged between 2.7 and 4.0 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 first hour of 1-hour TSP monitoring with the same construction works and dust mitigation measures being carried out. • With reference to the recorded wind direction (ranged between 59^o and 101^o, blowing from an easterly direction) and wind speed (ranged between 2.7 and 4.9 m/s) during the 24-hour TSP monitoring, Stations ASR1 are located downstream to the construction works at Portion N-A at most time. However, dust suppression measures were implemented properly on site. Water spraying was applied on site to prevent dust. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	According to the photo record provided by the Contractor, dust suppression measures were properly implemented. Water spraying was applied to prevent dust. Photos are provided in Annex A. 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.

ERM

Annex A Photos provided by the Contractor

*Note: Photos taken on 23/5/2019

Water spraying was applied at the main haul road to prevent dust. (Works Area Portion N-C)

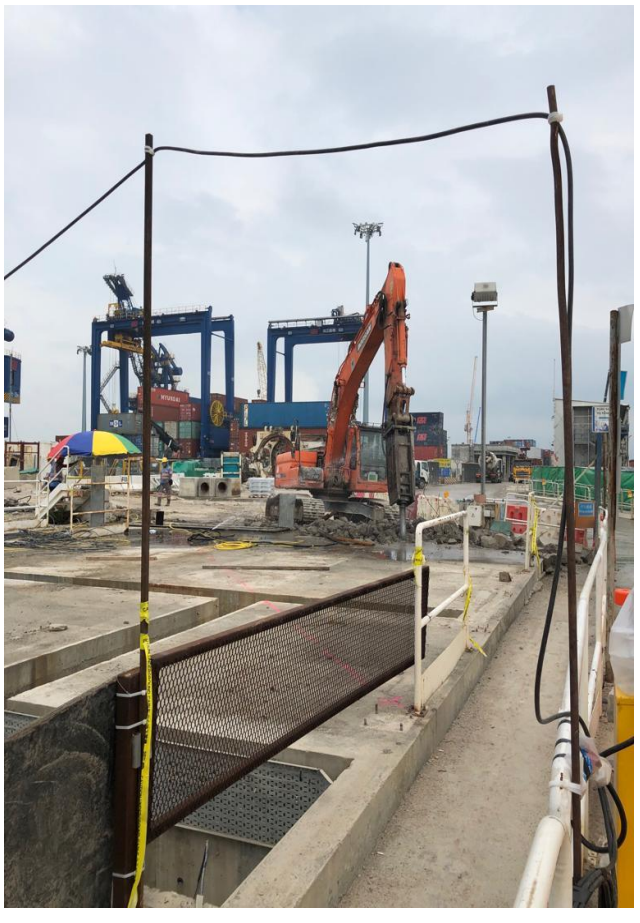
Water spraying was applied at the main haul road to prevent dust. (Works Area Portion N-A)

ERM

Annex A Photos provided by the Contractor

*Note: Photos taken on 24/5/2019

Water spraying was applied during rock breaking to prevent dust. (Works Area Portion N-A)



Water spraying was applied during rock breaking to prevent dust. (Works Area Portion N-A)

Air quality monitoring results on 23/5/2019								
Project	Works	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	23/5/2019	AQMS1	Sunny	13:55	1-hour TSP	145	ug/m3
TMCLKL	HY/2012/08	23/5/2019	AQMS1	Sunny	14:57	1-hour TSP	83	ug/m3
TMCLKL	HY/2012/08	23/5/2019	AQMS1	Sunny	15:59	1-hour TSP	80	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR1	Sunny	13:44	1-hour TSP	408	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR1	Sunny	14:46	1-hour TSP	169	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR1	Sunny	15:48	1-hour TSP	191	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR10	Sunny	13:13	1-hour TSP	122	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR10	Sunny	14:15	1-hour TSP	37	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR10	Sunny	15:17	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR5	Sunny	13:33	1-hour TSP	215	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR5	Sunny	14:35	1-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR5	Sunny	15:37	1-hour TSP	105	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR6	Sunny	13:23	1-hour TSP	167	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR6	Sunny	14:25	1-hour TSP	60	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR6	Sunny	15:27	1-hour TSP	93	ug/m3
TMCLKL	HY/2012/08	23/5/2019	AQMS1	Sunny	17:01	24-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR1	Sunny	16:50	24-hour TSP	217	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR10	Sunny	16:19	24-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR5	Sunny	16:39	24-hour TSP	80	ug/m3
TMCLKL	HY/2012/08	23/5/2019	ASR6	Sunny	16:29	24-hour TSP	71	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)**
19/05/23	0:00	1.8	71
19/05/23	1:00	2.2	83
19/05/23	2:00	2.2	93
19/05/23	3:00	1.8	97
19/05/23	4:00	1.8	60
19/05/23	5:00	1.8	67
19/05/23	6:00	2.2	99
19/05/23	7:00	1.8	82
19/05/23	8:00	2.2	83
19/05/23	9:00	2.7	95
19/05/23	10:00	2.7	82
19/05/23	11:00	3.1	97
19/05/23	12:00	2.2	92
19/05/23	13:00	2.7	84
19/05/23	14:00	4	105
19/05/23	15:00	3.1	84
19/05/23	16:00	3.6	86
19/05/23	17:00	3.1	91
19/05/23	18:00	3.1	101
19/05/23	19:00	3.1	86
19/05/23	20:00	3.6	65
19/05/23	21:00	4	85
19/05/23	22:00	4.5	100
19/05/23	23:00	4.5	82
19/05/24	0:00	3.6	97
19/05/24	1:00	2.7	60
19/05/24	2:00	3.1	75
19/05/24	3:00	3.1	73
19/05/24	4:00	3.1	59
19/05/24	5:00	3.1	60
19/05/24	6:00	3.1	64
19/05/24	7:00	4	91
19/05/24	8:00	4.5	89
19/05/24	9:00	4.9	87
19/05/24	10:00	4.5	100
19/05/24	11:00	4.5	81
19/05/24	12:00	4.5	101
19/05/24	13:00	4.9	100
19/05/24	14:00	4.5	81
19/05/24	15:00	4.5	80
19/05/24	16:00	4.5	80
19/05/24	17:00	4.5	86
19/05/24	18:00	4.5	93
19/05/24	19:00	4	63
19/05/24	20:00	4	75
19/05/24	21:00	4.5	87
19/05/24	22:00	4.9	87
19/05/24	23:00	4.5	84

Dragages - Bouygues Joint Venture	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: 20 May 2019 to 至 26 May 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	✓	✓	✓	✓	✓	✓	✓

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。

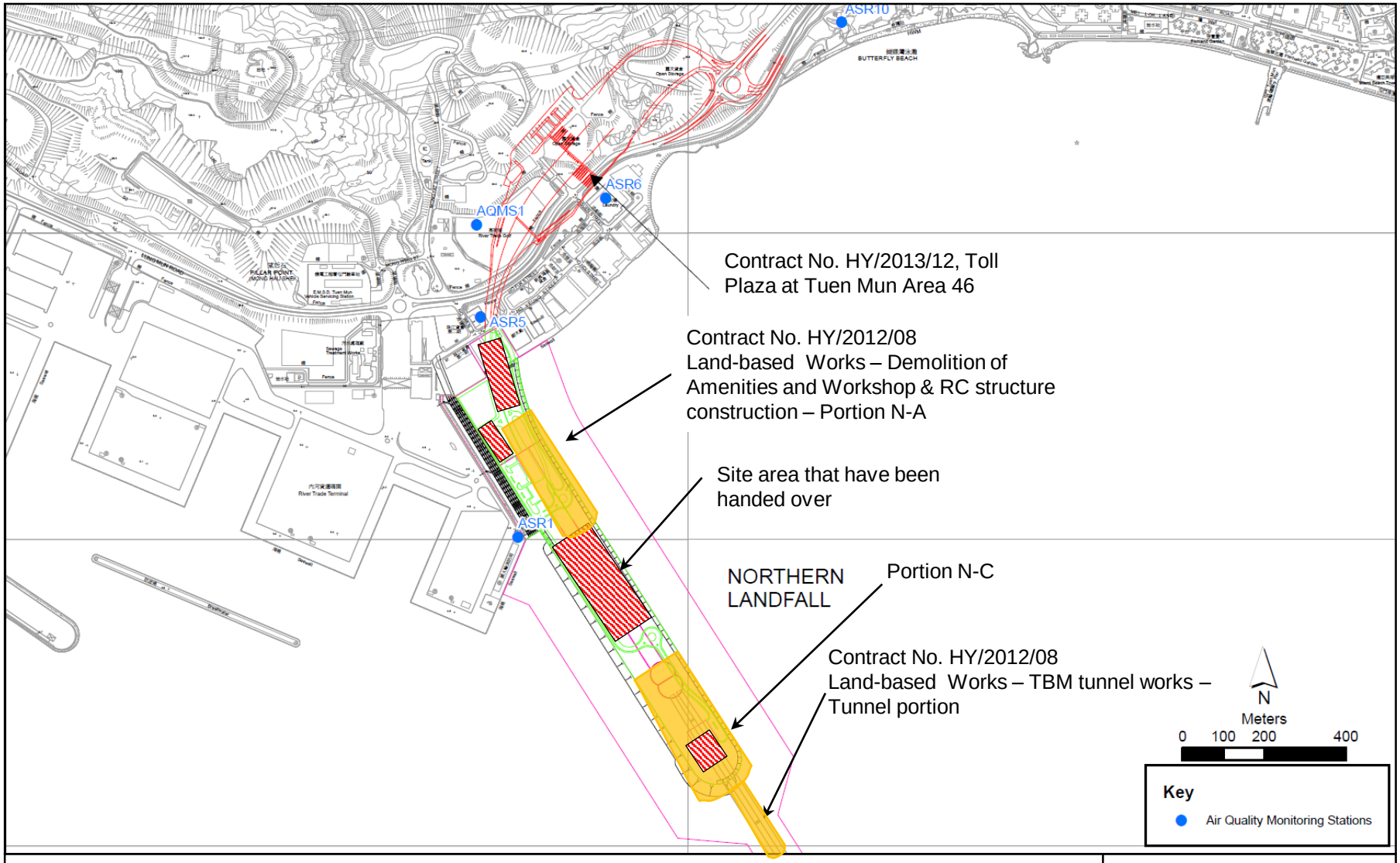


Figure 1

Indicative Construction Works Area on 23 May 2019

DATE: 06/03/2013

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	4 June 2019

Dear Sir or Madam,

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

Action Level Exceedance
0212330_15 May 2019_ Depth-averaged SS_E_Station IS8

A total of one Action Level Exceedance was recorded on 15 May 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.	**0212330_15 May 2019_ Depth-averaged SS_E_Station IS8** **[Total No. of Exceedances = 1]**	
Date	15 May 2019 (Measured) 16 May 2019 (*In situ* results received by ERM) 24 May 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N), IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11	
Parameter(s) with Exceedance(s)	Depth-averaged Suspended Solids (SS, mg/L)	
Action Levels	SS	23.5 mg/L
Limit Levels	SS	34.4 mg/L
Measured Levels	Action Level Exceedance for SS is observed at IS8 (24.7 mg/L) during mid-ebb tide.	
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, seawall modification works was carried out on 15 May 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Project, in view of the following: • Apart from observed exceedances, SS levels at all other monitoring stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • Depth-averaged Turbidity levels and average DO levels at all stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • IS8 is far away (>1.5km) from the Marine works area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, IS(Mf)16 is much closer to the works area than IS8 and no exceedance was recorded at IS(Mf)16. Therefore, the exceedance is unlikely to be related to 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 15 May 2019 and locations of water quality monitoring stations are attached.	

ERM

Annex A Photos taken by MMO on 15/5/2019

*Note: Photos taken on 15/5/2019

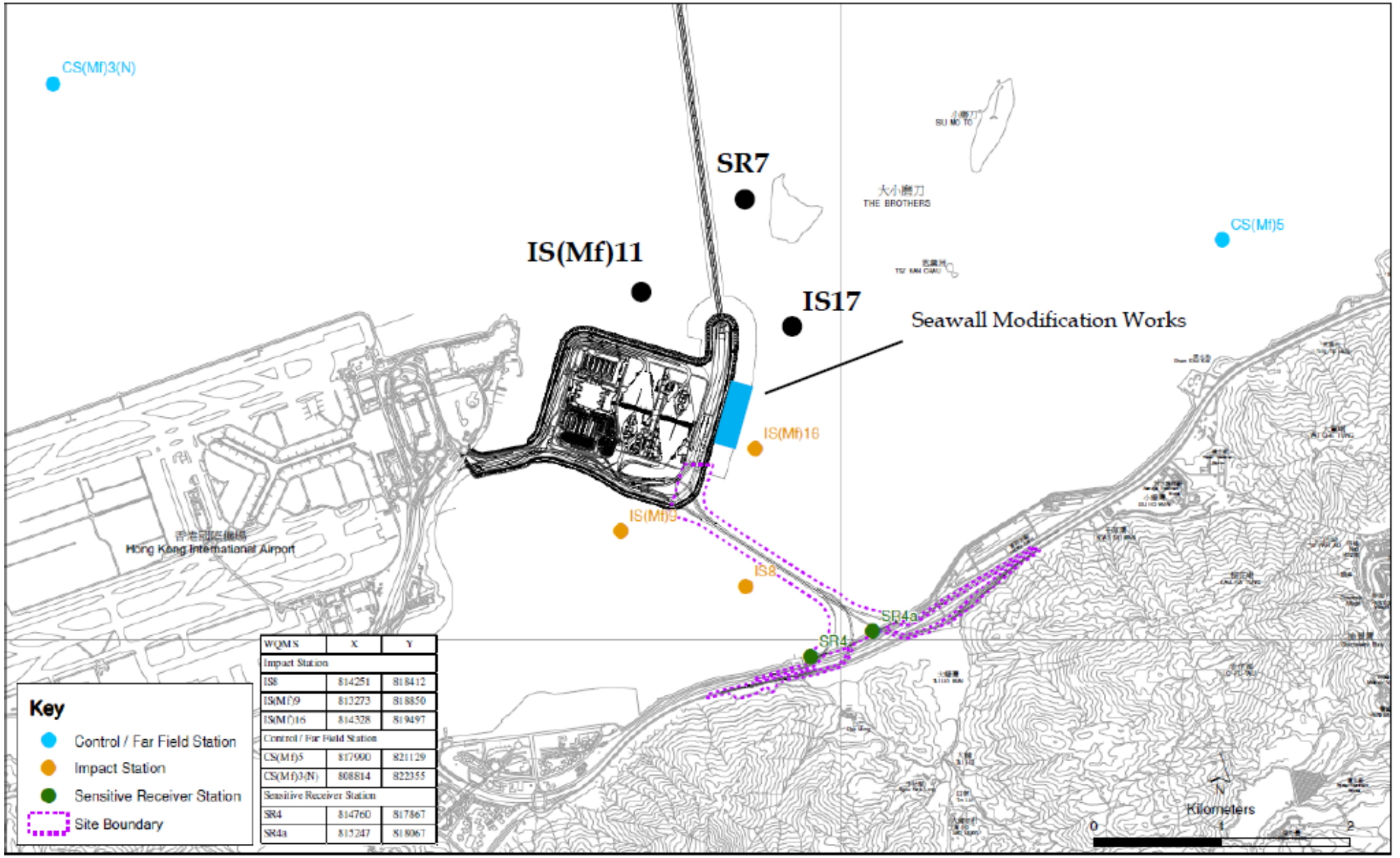
No leakage of wastewater was observed at the marine works area. (Portion S-B)

No leakage of wastewater was observed near IS(Mf)16.

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	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/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Surface	1	26.5	8.1	21.3	8.8	8.6	4.7	4.3	11.5	12.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Surface	2	26.5	8.2	21.3	8.8		4.8		12.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Middle	1	26.4	8.1	21.9	8.3		4.1		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Middle	2	26.4	8.1	21.9	8.3		4.2		12.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Bottom	1	26.5	8.1	23.3	8.2	8.2	4.1		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Bottom	2	26.5	8.1	23.3	8.2		4.0		13.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Surface	1	25.3	8.1	20.6	8.6	8.4	4.1	4.7	8.0	9.2
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Surface	2	25.3	8.1	20.5	8.6		4.0		9.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Middle	1	25.2	8.1	20.9	8.2		5.0		9.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Middle	2	25.2	8.1	20.9	8.2		5.0		9.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Bottom	1	25.2	8.1	21.0	8.2	8.2	5.1		9.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Bottom	2	25.2	8.1	21.0	8.2		5.1		9.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Surface	1	26.4	8.2	21.6	8.6	8.6	10.8	11.0	18.5	18.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Surface	2	26.5	8.2	21.6	8.6		10.3		17.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Bottom	1	26.3	8.2	21.8	8.5	8.5	11.5		19.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Bottom	2	26.3	8.2	21.8	8.5		11.5		18.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Surface	1	26.4	8.2	21.9	8.6	8.6	6.8	7.0	17.8	18.3
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Surface	2	26.5	8.2	21.9	8.6		6.8		17.3	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Bottom	1	26.2	8.2	22.0	8.5	8.5	7.2		18.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Bottom	2	26.2	8.2	22.0	8.5		7.1		19.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Surface	1	26.6	8.1	21.6	8.2	8.2	10.3	9.1	13.5	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Surface	2	26.6	8.1	21.6	8.2		10.5		14.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Bottom	1	26.8	8.1	21.7	8.2	8.2	7.7		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Bottom	2	26.8	8.1	21.7	8.2		7.8		13.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Surface	1	26.4	8.2	22.1	8.6	8.6	16.1	15.3	25.1	24.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Surface	2	26.4	8.2	22.0	8.6		16.0		25.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Bottom	1	26.3	8.2	22.1	8.6	8.6	14.6		23.4	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Bottom	2	26.3	8.2	22.1	8.6		14.6		24.4	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Surface	1	27.1	8.3	21.5	9.5	9.5	6.4	6.4	15.7	15.1
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Surface	2	27.1	8.3	21.5	9.5		6.5		14.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Bottom	1	27.1	8.3	21.4	9.4	9.5	6.4		14.4	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Bottom	2	27.1	8.3	21.4	9.5		6.3		15.5	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	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/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Surface	1	26.5	8.3	21.4	9.1	9.1	4.8	5.8	12.0	11.4
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Surface	2	26.5	8.3	21.5	9.1		4.9		11.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Middle	1	26.3	8.3	21.4	9.0		7.1		11.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Middle	2	26.5	8.3	21.4	9.2		6.0		10.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Bottom	1	26.3	8.3	21.7	9.1	9.1	6.2		11.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Bottom	2	26.3	8.3	21.7	9.0		5.6		11.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Surface	1	26.5	8.3	17.4	10.1	9.0	4.5	4.5	10.9	12.5
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Surface	2	26.5	8.3	17.4	10.1		4.4		11.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Middle	1	25.2	8.0	18.3	7.8		4.4		12.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Middle	2	25.2	8.0	18.1	7.9		4.4		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Bottom	1	25.7	8.0	20.1	7.9	7.9	4.5		13.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Bottom	2	25.5	8.0	20.2	7.9		4.5		13.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Surface	1	26.6	8.3	21.2	10.1	10.1	9.4	7.3	7.2	8.5
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Surface	2	26.6	8.3	21.2	10.1		9.2		7.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Bottom	1	26.7	8.3	21.2	10.1	10.1	5.2		9.4	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Bottom	2	26.7	8.3	21.2	10.1		5.2		9.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Surface	1	26.9	8.4	21.4	10.3	10.3	3.8	3.9	13.2	13.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Surface	2	26.9	8.4	21.4	10.3		3.9		13.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Bottom	1	26.8	8.4	21.5	9.8	9.8	3.9		14.1	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Bottom	2	26.8	8.4	21.5	9.8		3.8		14.1	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Surface	1	26.8	8.4	21.2	10.3	10.3	11.3	8.7	9.7	10.9
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Surface	2	26.8	8.4	21.2	10.3		12.6		8.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Bottom	1	26.8	8.4	21.3	10.3	10.3	5.3		12.3	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Bottom	2	26.8	8.4	21.3	10.3		5.4		12.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Surface	1	26.4	8.3	21.3	9.4	9.4	10.7	9.5	14.5	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Surface	2	26.4	8.3	21.3	9.4		10.6		14.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Bottom	1	26.4	8.3	21.4	9.4	9.4	8.2		12.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Bottom	2	26.4	8.3	21.4	9.4		8.6		13.3	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Surface	1	26.6	8.3	20.9	9.5	9.5	9.8	9.0	13.0	13.6
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Surface	2	26.6	8.3	20.9	9.5		10.4		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Bottom	1	26.5	8.3	21.1	9.5	9.5	7.8		13.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Bottom	2	26.5	8.3	21.1	9.5		7.8		14.4	

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4	814760	817867
SR4a	815247	818067

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	13 June 2019

Dear Sir or Madam,

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

Action Level Exceedance
0212330_29 May 2019_ Depth-averaged SS_F_Station SR4(N)

A total of one Action Level Exceedance was recorded on 29 May 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.	**0212330_29 May 2019_ Depth-averaged SS_F_Station SR4(N)** **[Total No. of Exceedances = 1]**	
Date	29 May 2019 (Measured) 31 May 2019 (*In situ* results received by ERM) 10 June 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N), IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11	
Parameter(s) with Exceedance(s)	Depth-averaged Suspended Solids (SS, mg/L)	
Action Levels	SS	23.5 mg/L
Limit Levels	SS	34.4 mg/L
Measured Levels	Action Level Exceedance for SS is observed at SR4(N) (24.4 mg/L) during mid-flood tide.	
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, seawall modification works was carried out on 29 May 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Project, in view of the following: • Apart from observed exceedances, SS levels at all other monitoring stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • Depth-averaged Turbidity levels and average DO levels at all stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • SR4(N) is far away (>2.5km) from the Marine 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 and in the same direction to the works area and no exceedance was recorded at IS(Mf)16. Therefore, the exceedance is unlikely to be related to 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 29 May 2019 and locations of water quality monitoring stations are attached.	

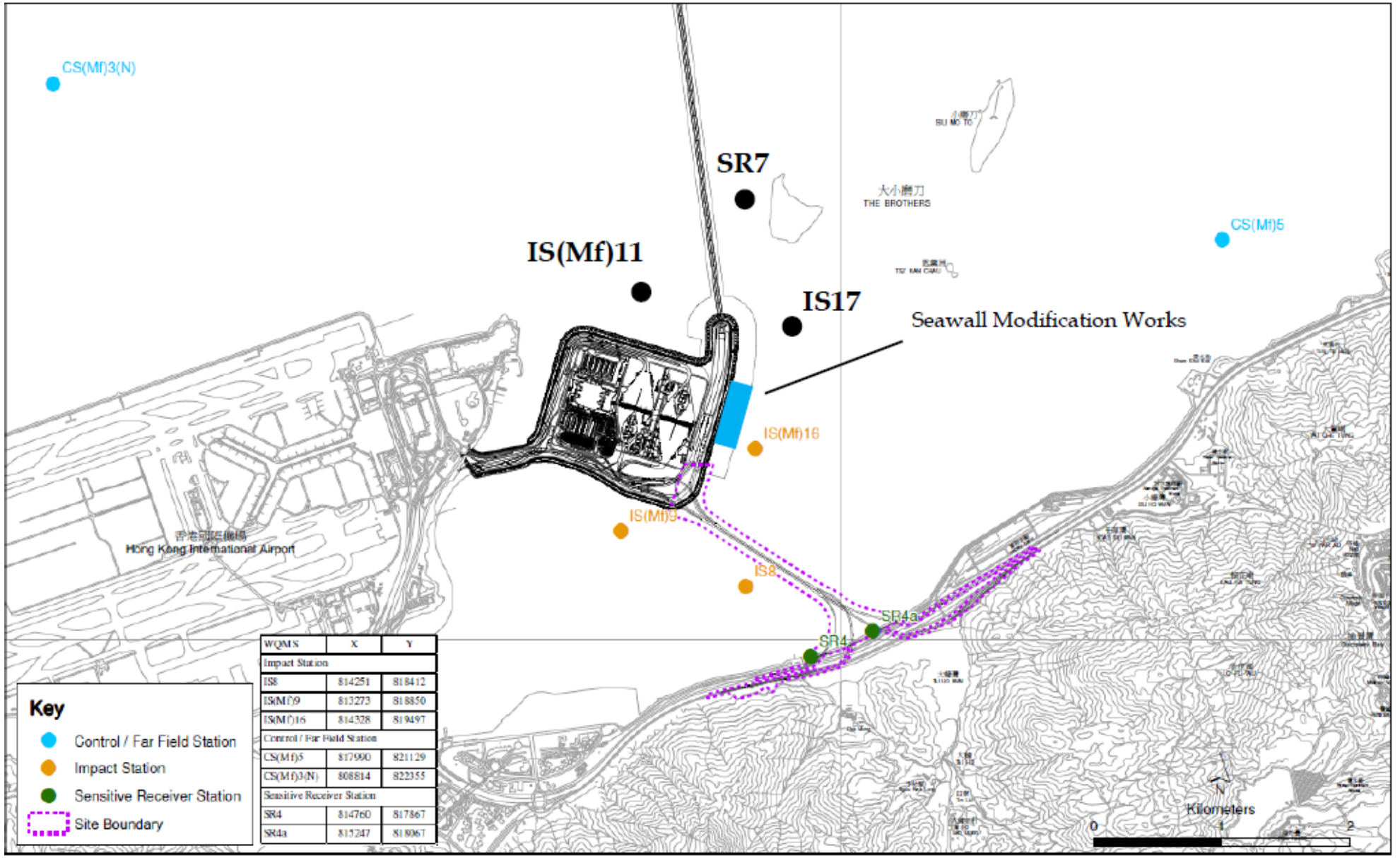
ERM

Annex A Photos taken by MMO on 29/5/2019

*Note: Photos taken on 29/5/2019

No water quality impact was observed at SR4(N)

No water quality impact was observed at SR4(N)



WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4	814760	817867
SR4a	815247	818067

Figure 1

Environmental Resources Management

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Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	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
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Surface	1	1	26.5	8.0	21.3	6.6	6.6	1.7	1.8	0.8	0.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Surface	1	2	26.5	8.0	21.3	6.6		1.7		0.9	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Middle	2	1	26.4	8.0	21.3	6.5		2.2		<0.5	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Middle	2	2	26.4	8.0	21.3	6.6		2.2		0.6	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Bottom	3	1	26.4	8.0	23.2	6.5	6.5	1.6		0.8	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Bottom	3	2	26.4	8.0	23.2	6.5		1.6		1.1	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Surface	1	1	26.6	7.9	19.3	6.5	6.5	4.6	5.1	2.4	2.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Surface	1	2	26.6	7.9	19.3	6.5		4.6		2.3	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Middle	2	1	26.6	7.9	19.3	6.5		4.5		3.2	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Middle	2	2	26.6	7.9	19.3	6.5		4.5		2.7	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Bottom	3	1	26.6	7.9	19.3	6.6	6.6	6.1		3.0	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Bottom	3	2	26.6	7.9	19.3	6.6		6.1		2.7	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Surface	1	1	26.4	8.0	19.0	6.6	6.6	3.2	3.5	2.8	2.8
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Surface	1	2	26.4	8.0	19.0	6.6		3.2		2.8	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Bottom	3	1	26.4	8.0	19.1	6.6	6.6	3.7		2.7	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Bottom	3	2	26.4	8.0	19.1	6.6		3.7		2.8	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Surface	1	1	26.6	8.0	14.7	6.8	6.8	7.6	5.9	5.1	4.3
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Surface	1	2	26.6	8.0	14.7	6.8		7.6		5.2	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Bottom	3	1	26.5	8.0	19.7	6.4	6.4	4.2		3.7	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Bottom	3	2	26.5	8.0	19.7	6.4		4.2		4.1	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Surface	1	1	26.4	7.9	17.4	6.1	6.1	5.4	5.8	6.2	7.1
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Surface	1	2	26.4	7.9	17.4	6.1		5.4		5.9	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Bottom	3	1	26.4	7.9	19.8	6.0	6.0	6.2		8.0	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Bottom	3	2	26.4	7.9	19.8	6.0		6.2		8.3	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Surface	1	1	26.5	8.0	17.5	6.6	6.6	5.6	6.2	8.0	9.1
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Surface	1	2	26.5	8.0	17.5	6.6		5.6		7.8	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Bottom	3	1	26.4	8.0	18.9	6.5	6.5	6.7		10.3	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Bottom	3	2	26.4	8.0	18.9	6.5		6.7		10.1	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Surface	1	1	26.3	8.0	18.2	6.7	6.7	4.0	4.5	4.3	3.6
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Surface	1	2	26.3	8.0	18.2	6.7		3.9		4.5	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Bottom	3	1	26.3	8.0	17.8	6.7	6.7	5.1		5.2	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Bottom	3	2	26.3	8.0	17.8	6.7		5.1		5.7	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	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
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Surface	1	1	26.0	8.1	20.9	6.8	6.7	2.6	3.4	3.0	3.3
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Surface	1	2	26.0	8.1	20.9	6.8		2.6		3.3	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Middle	2	1	26.1	8.0	21.1	6.6		4.7		3.1	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Middle	2	2	26.1	8.0	21.1	6.7		4.7		3.2	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Bottom	3	1	25.9	8.0	22.9	6.5	6.5	2.9		3.6	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Bottom	3	2	25.9	8.0	22.9	6.5		2.8		3.5	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Surface	1	1	26.6	7.9	18.9	6.9	6.9	3.9	3.9	1.2	1.4
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Surface	1	2	26.6	7.9	18.9	6.9		3.9		1.0	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Middle	2	1	26.6	7.9	18.9	6.8		3.9		1.3	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Middle	2	2	26.6	7.9	18.9	6.8		3.9		1.4	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Bottom	3	1	26.6	7.9	19.0	6.9	6.9	4.0		1.7	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Bottom	3	2	26.6	7.9	19.0	6.9		4.0		1.6	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Surface	1	1	26.3	8.0	19.7	6.7	6.7	3.5	6.2	3.6	4.4
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Surface	1	2	26.3	8.0	19.7	6.7		3.5		4.1	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Bottom	3	1	26.4	8.0	19.8	6.7	6.7	8.9		4.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Bottom	3	2	26.4	8.0	19.8	6.7		9.0		5.1	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Surface	1	1	26.5	8.0	19.8	6.6	6.6	3.4	8.3	5.7	13.1
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Surface	1	2	26.5	8.0	19.8	6.6		3.4		6.0	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Bottom	3	1	25.9	8.0	18.8	6.9	6.9	13.3		16.5	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Bottom	3	2	25.9	8.0	18.8	6.8		13.2		16.7	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Surface	1	1	26.2	8.0	18.3	6.6	6.6	12.4	12.1	25.0	24.4
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Surface	1	2	26.1	8.0	18.3	6.6		12.3		25.7	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Bottom	3	1	26.2	8.0	18.9	6.6	6.6	11.8		23.2	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Bottom	3	2	26.2	8.0	18.9	6.6		11.8		23.7	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Surface	1	1	26.3	8.0	20.2	6.6	6.6	3.5	5.3	2.8	2.8
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Surface	1	2	26.2	8.0	20.0	6.6		3.5		3.3	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Bottom	3	1	26.3	8.0	20.2	6.6	6.6	7.1		2.4	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Bottom	3	2	26.3	8.0	20.2	6.6		7.0		2.6	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Surface	1	1	26.3	8.0	19.9	6.6	6.6	6.1	5.3	3.9	2.9
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Surface	1	2	26.4	8.0	19.9	6.6		6.1		3.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Middle	2	2									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Bottom	3	1	26.2	8.0	19.7	6.6	6.6	4.5		3.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Bottom	3	2	26.2	8.0	19.7	6.6		4.6		3.9	

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Email message

Environmental Resources Management

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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 Impact Dolphin Monitoring
Date	28 October 2019

Dear Sir or Madam,

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

0212330_Mar2019/May2019_dolphin_STG&ANI_NEL&NWL

A total of one limit level exceedance was recorded in the quarterly impact dolphin monitoring data between March and May 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

Impact Dolphin Monitoring
Notification of Exceedance

Log No.	**0212330_ Mar2019/May2019_dolphin_STG&ANI_NEL&NWL** **[Total No. of Exceedances = 1 Limit Level Exceedance]**	
Date	March - May 2019 (monitored) 25 October 2019 (results received by ERM)	
Monitoring Area	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
Parameter(s) with Exceedance(s)	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
Action Levels	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
Limit Levels		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG < 3.9 & ANI < 17.9
Recorded Levels	NEL	STG = 0 & ANI = 0
	NWL	STG = 1.13 & ANI = 2.54
	One Limit Level Exceedance was recorded in the quarterly impact dolphin monitoring at NEL and NWL between March to May 2019. The exceedance was reported in the approved *Sixty-seventh Monthly EM&A Report* dated 14 June 2019.	
Statistical Analyses	Further to the review of the available and relevant dolphin monitoring data in the EM&A programme by this Contract, statistical analyses were conducted as follows: • A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present impact quarter, March 2019 to May 2019) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.05$ as the significance level in the statistical tests, significant differences in STG ($p = 0.0019$) and ANI ($p = 0.0113$) were detected between Periods. • A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters, December 2012 to May 2019) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and cumulative impact monitoring quarter. By setting $\alpha = 0.00001$ as the significance level in the statistical tests, significant difference in STG ($p = 0.000000$) and in ANI ($p = 0.000000$) between Cumulative Period and Location were detected. *Note: The commencement date under *Contract No. HY/2012/08* is 1 November 2013.	
Works Undertaken (in the monitoring quarter)	In the quarter between March to May 2019, Seawall Modification Works was undertaken under Contract No. HY/2012/08.	

Possible Reason for Action or Limit Level Exceedance(s)	The potential factors that may have contributed to the observed exceedance are reviewed below: • Blocking of CWD travelling corridor: The *Monitoring of Marine Mammals in Hong Kong Waters (2018 – 19)* (1) reported that dolphin usage and traveling activities to the northern side of the airport (dolphin traveling corridor) are affected by frequent high-speed ferry traffic from Sky Pier (not related to this Contract), which is likely a major factor resulting in the decrease in dolphin abundances in North Lantau. • Marine works of the Contract: As per the findings from the EIA report (*Section 8.11.9*), the major influences on the Chinese White Dolphin (CWD) *Sousa chinensis* under this Contract are marine traffics, reclamation and dredging works. The Contractor implemented the marine traffic control in the reporting period as per the requirements in the *EP-354/2009/D* and the updated *EM&A Manual*. Most of the vessels of this Contract also worked within the site boundary, in which the area is seldom used by CWD. Disturbance from vessels of this Contract is considered minor. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed. • Impact on water quality: According to the findings in the water quality monitoring results at the impact monitoring stations between March 2019 and May 2019, there were two (2) Action Level of Suspended Solids (SS) exceedances for water quality impact monitoring in the reporting period. The exceedances were considered not related to this Contract upon further investigation and the investigation reports are presented in *Appendix J of the 22nd Quarterly EM&A Report (March to May 2019).* In view of the above, marine ecological mitigation measures were considered properly implemented, and thus no unacceptable impact on CWD or its habitat was associated with this Contract in this quarter.
Actions Taken / To Be Taken	In the quarter between March and May 2019, Seawall Modification Works were carried out. The existing mitigation measures are recommended to be continuously implemented. Furthermore, it is also recommended to reduce the vessels for marine works as much as possible. The ET will monitor for future trends in exceedance(s). A joint team meeting was held on 11 March 2019 for discussion on CWD trend, with attendance of ENPO, Representatives of Resident Site Staff (RSS), Representatives of Environmental Teams (ETs) for Contract No. HY/2011/03, HY/2013/04, HY/2012/07 and HY/2012/08. The discussion/recommendation as presented in the meeting, which might be relevant to this Contract are summarized below. It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified or separate from the other stress factors. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractors to ensure the relevant measures are fully implemented. It was recommended that the marine works of HZMB projects should be completed as soon as possible to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible. The participants were also reminded that the protection measures (e.g. speed limit control) for the BMP shall be implemented so as to provide a better habitat for dolphin recovery. It is noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transhipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP. It was also recommended that the marine works footprint and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible. Dolphin specialists of the Projects confirmed that the CWD sighting nearby north of Sha Chau and Lung Kwu Chau Marine Park has significantly declined. The reason for the decline was likely related to the re-routing of high-speed ferry from Sky Pier. The CWDs in the area should be closely followed.
Remarks	The results of impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved *Sixty-fifth* to *Sixty-seventh Monthly EM&A Reports*.

(1) Hung S K Y (2017). Prepared for AFCD. Available at: https://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/files/Final_Report_2016_17.pdf