

**Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances** Notification No.: 278a ver 1

Date of Notification: 13 June 2018

Works Inspected: 24-hr TSP monitoring was undertaken on 1 June 2018 and the test report was issued on 11 June 2018.

Monitoring Location: AMS6 – Dragonair Building

Parameter: 24-hour TSP monitoring

Action & Limit Level (AL & LL) / Measured Level:

PARAMETER	STATION	AL ($\mu\text{g}/\text{m}^3$)	LL ($\mu\text{g}/\text{m}^3$)	MEASURED LEVEL, $\mu\text{g}/\text{m}^3$
1 June 2018, 24-hr TSP (8:00 – 8:00 hours)	Dragonair Building (AMS6)	173	260	<u>382</u>

Notes: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Limit Level Non-compliance:

A Limit Level exceedance of 24-hr TSP level was recorded at AMS6 - Dragonair Building on 1 June 2018.

According to the information provided by the Contractor, landscaping works were conducted at construction site S16 which is located near AMS6 during the sampling period on 1 June 2018. Figure 1 shows the location of construction site S16 and air monitoring station AMS6. According to information provided by the Contractor, water spraying was provided for dusty materials to maintain the entire surface in a damp condition and haul roads were sprayed with water by water trucks regularly.

During collection of filter paper at AMS6 on 4 June 2018, weed was observed on the filter paper which was used for monitoring on 1 June 2018. Also, the weed in the vicinity of station AMS6 was found to be cleared by other parties. It is noted that the weed removal work in the vicinity of station AMS6 was not carried out under the Contract No. HY/2011/03. The weed clearing activities in the vicinity of AMS6 may be one of dust sources to cause the 24-hr TSP LL exceedance on 1 June 2018. An additional monitoring was carried out on 6 June 2018 and a routine monitoring was carried out on 7 June 2018. The 24-hr TSP result on 6 and 7 June 2018 were $32 \mu\text{g}/\text{m}^3$ which were below Action and Limit Level. It was also noted that no Action and Limit Level exceedances of 1-hr TSP were recorded at air monitoring station AMS6 - Dragonair Building during the period from 1 June 2018 to 20 June 2018.

Actions taken/ to be taken:

It was noted that the Contractor has implemented dust control measure throughout the construction phase. There is no direct evidence that the exceedance is related to the Contract. No immediate actions are considered necessary. However, the Contractor is reminded to continuously implement the dust mitigation measures as specified in Environmental Mitigation Implementation Schedule (EMIS), Environmental Management Plan, Method Statements, General and Particular Specifications of this Contract throughout the construction phase.

Reviewed by : Claudine Lee Title : ET Leader



Date : 6 July 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

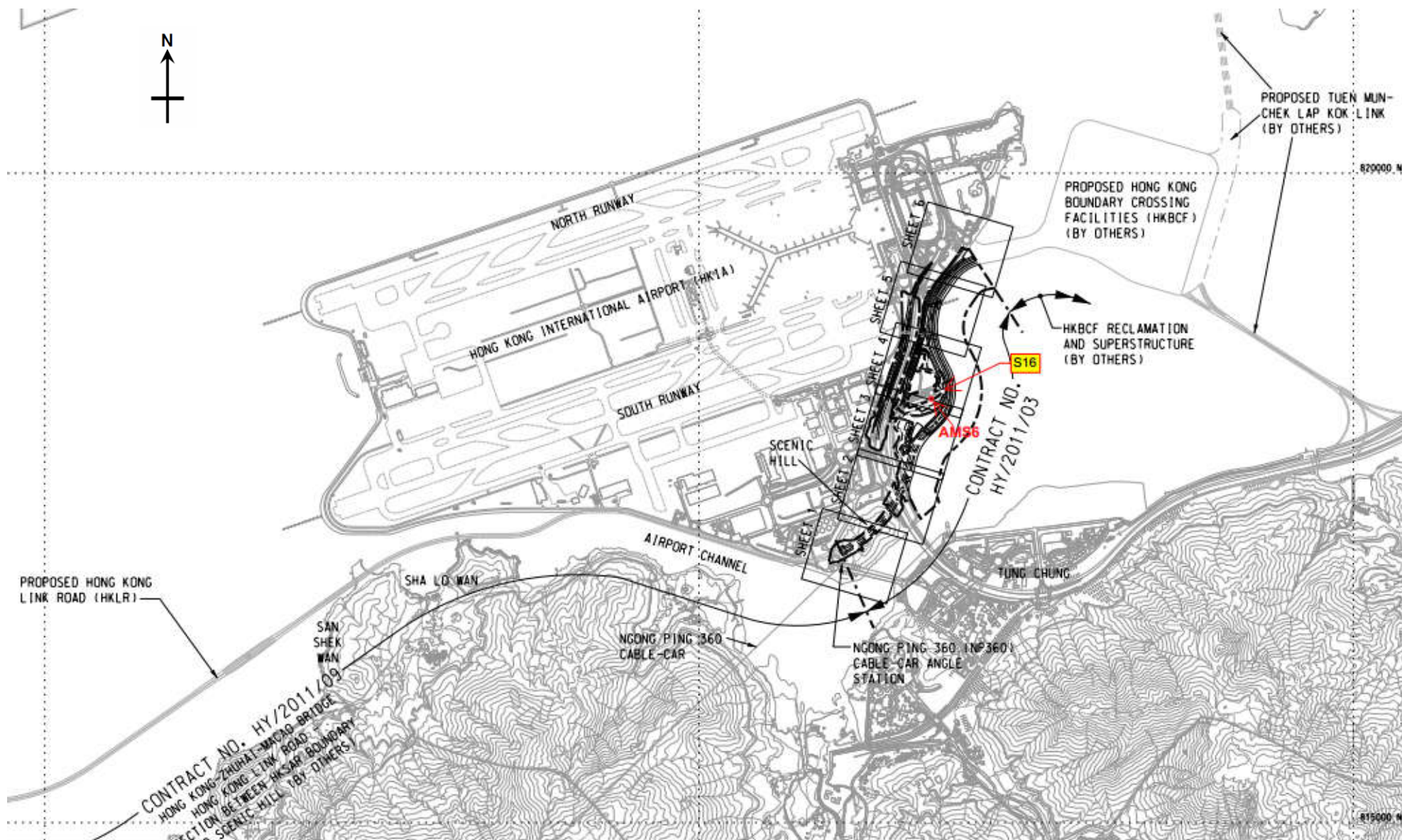
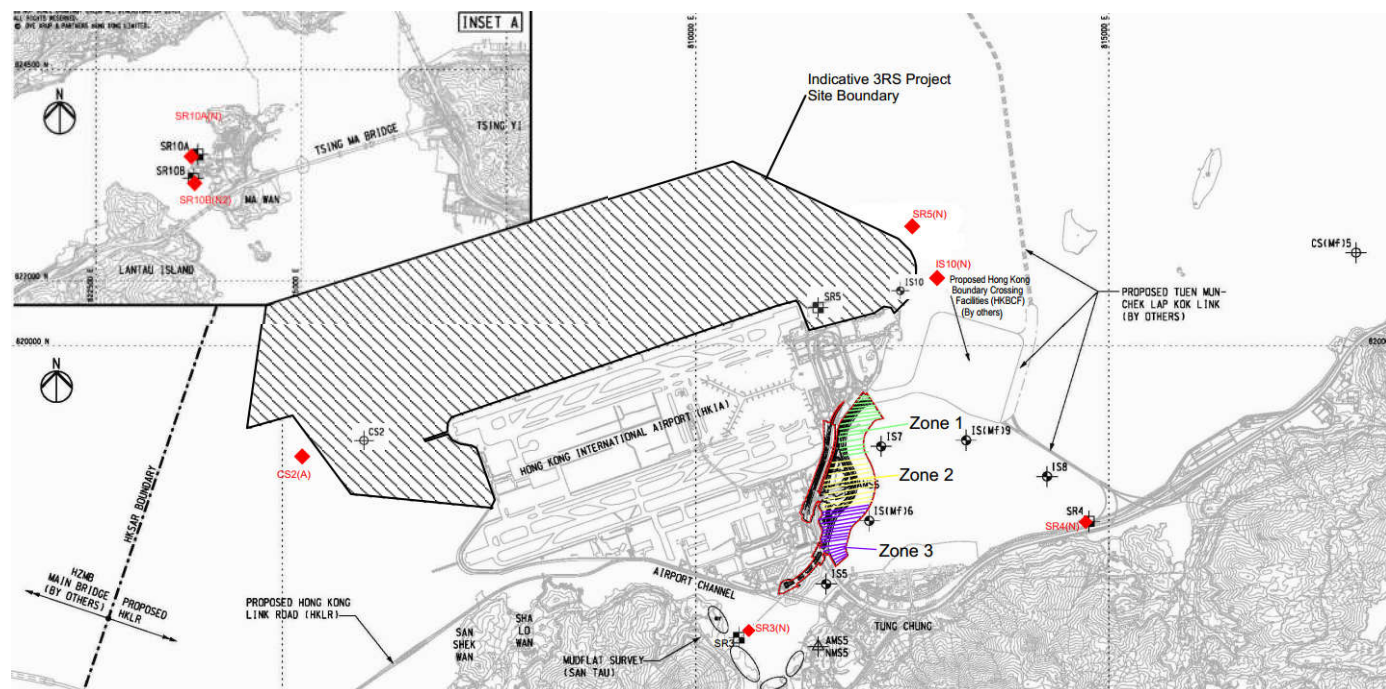


Figure 1 - Location of Construction Site S16 and Air Monitoring Station AMS6

Contract No. HY/2011/03 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities Notifications of Environmental Quality Limits Exceedances Notification No.: 279 ver0																		
Date of Notification: 6 July 2018																		
Works Inspected: Data collected from water sampling works on 29 June 2018 and the test report was issued on 6 July 2018.																		
Monitoring Location: Water Quality Monitoring Stations																		
Parameter: Dissolved Oxygen (DO)/ Suspended Solids (SS) / Turbidity (TURB)																		
Action & Limit Level (AL & LL) / Measured Level:																		
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)												
DO	IS5	Bottom	4.7	3.6	4.6	4.9												
<p>Notes:</p> <p><i>Bold Italic</i> means AL exceedances.</p> <p><u><i>Bold Italic with underline</i></u> means LL exceedances.</p> <p>Possible reasons for Action Level Non-compliance:</p> <p>On 29 June 2018, an Action Level exceedance of dissolved oxygen was recorded at station IS5 during the mid-ebb tide. The exceedance has been investigated and is considered unlikely to be related to contract works due to the following reasons:</p> <ol style="list-style-type: none"> 1. According to Contractor's information, there was no marine transportation near station IS5 during sampling period and no marine works were conducted near station IS5 which is located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise. 2. The range of dissolved oxygen for bottom level at station IS5 during the baseline monitoring is shown as below: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th>Station</th> <th>Depth</th> <th colspan="2">Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide</th> <th colspan="2">Range of Dissolved Oxygen (mg/L) Mid-Flood Tide</th> </tr> <tr> <td>IS5</td> <td>Bottom</td> <td>3.3</td> <td>to 8.6</td> <td>2.9</td> <td>to 9.4</td> </tr> </table> <p>On 29 June 2018, the measured value of dissolved oxygen for bottom level at station IS5 during the mid-ebb tide was within the range of the baseline monitoring.</p> <ol style="list-style-type: none"> 3. There were no specific activities recorded during the monitoring period that would cause any significant impact on the monitoring results. As such, the exceedance in DO level is considered to be attributed to other external factors rather than the contract works. 							Station	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide		IS5	Bottom	3.3	to 8.6	2.9	to 9.4
Station	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide														
IS5	Bottom	3.3	to 8.6	2.9	to 9.4													
<p>Actions taken/ to be taken:</p> <p>As the DO level recorded beyond the water quality criteria was not related to contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure the silt curtain is fully maintained throughout the construction works and construction works are under stringer supervision to prevent any water quality impacts to the seawater.</p>																		

Location Plan:



Reviewed by : Claudine Lee

Title : ET Leader

Claudine Lee

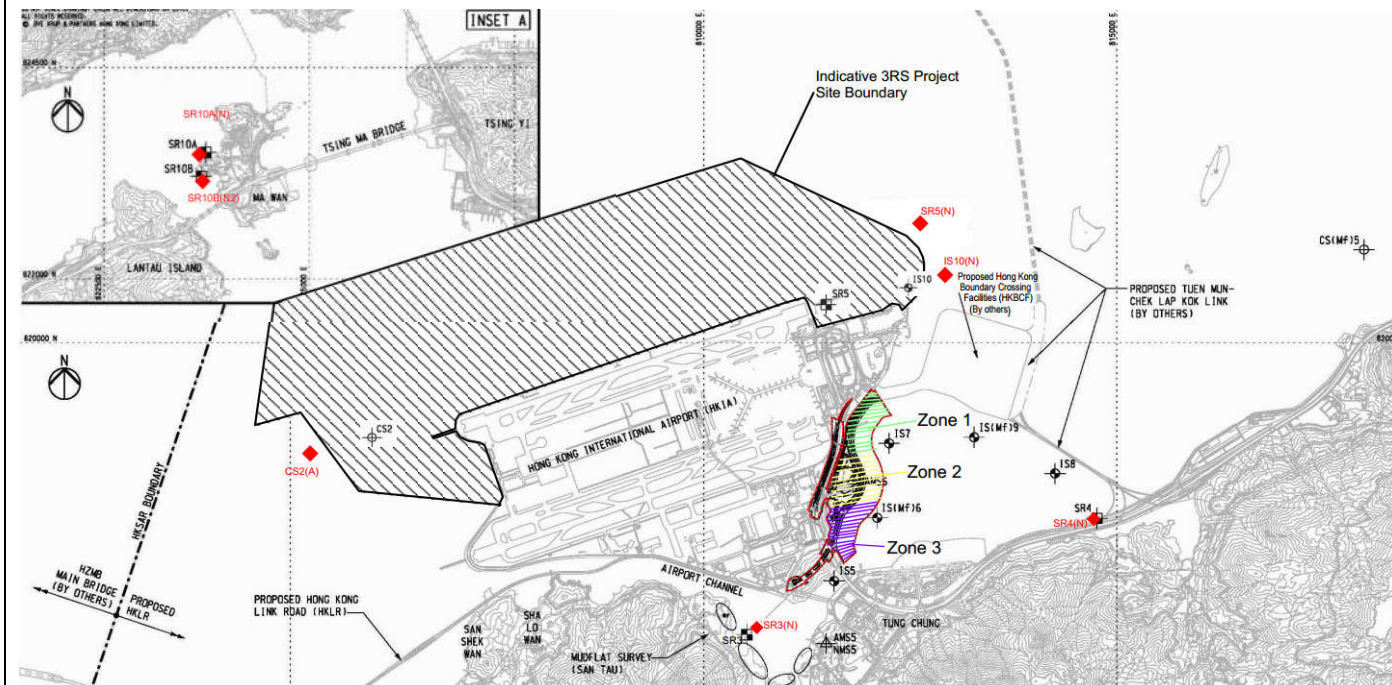
Date : 9 July 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities Notifications of Environmental Quality Limits Exceedances						
Date of Notification: 15 August 2018						
Works Inspected: Data collected from water sampling works on 6 August 2018 and the results were issued on 15 August 2018						
Monitoring Location: Water Quality Monitoring Stations						
Parameter: Dissolved Oxygen (DO)/ Suspended Solids (SS) Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
DO	IS10(N)	Surface and Middle	5.0	4.2	4.6	See note 3.
DO	SR5(N)	Surface and Middle	5.0	4.2	4.7	See note 3.
DO	IS10(N)	Bottom	4.7	3.6	4.3	See note 3.
DO	SR5(N)	Bottom	4.7	3.6	4.3	See note 3.
Notes: <ol style="list-style-type: none"> <i>Bold Italic</i> means AL exceedances. <u><i>Bold Italic with underline</i></u> means LL exceedances. Thunderstorm Warning was issued by the Hong Kong Observatory on 6 August 2018. The water quality monitoring for flood tide on 6 August 2018 was cancelled at these stations due to safety reason. 						
Possible reasons for Action Level Non-compliance:						
On 6 August 2018, Action Level exceedances of dissolved oxygen were recorded at stations IS10(N) and SR5(N) during mid-ebb tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:						
<ol style="list-style-type: none"> Seawall construction at Zones 2 and 3 were carried out on 6 August 2018. As confirmed by the Contractor, seawall construction at Zones 2 and 3 were carried out within the properly deployed silt curtain as recommended in the EIA Report. According to Contractor's information, there was no marine transportation near IS10(N) and SR5(N) during sampling period and no marine works were conducted near stations IS10(N) and SR5(N) which are located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise. The range of dissolved oxygen for surface and middle level, bottom level at stations IS10 and SR5 during the baseline monitoring is shown as below: 						
Stations	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide		
IS10	Surface and Middle	5.0	to 7.2	5.0	to 7.6	
SR5	Surface and Middle	5.1	to 7.3	4.8	to 7.4	
IS10	Bottom	4.6	to 7.0	4.9	to 7.0	
SR5	Bottom	4.8	to 7.0	4.8	to 7.1	
On 6 August 2018, the measured value of dissolved oxygen for surface and middle level, bottom level at stations IS10(N) and SR5(N) during the mid-ebb tide was below the range of the baseline monitoring.						
<ol style="list-style-type: none"> However, there were no specific activities recorded during the monitoring period that would cause any significant impact on the monitoring results. As such, the exceedances in DO level are considered to be attributed to other external factors rather than the contract works. 						

Actions taken/ to be taken:

As the DO level recorded beyond the water quality criteria was not related to contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure the silt curtain is fully maintained throughout the construction works and construction works are under stringer supervision to prevent any water quality impacts to the seawater.

Location Plan:

Reviewed by : Claudine Lee

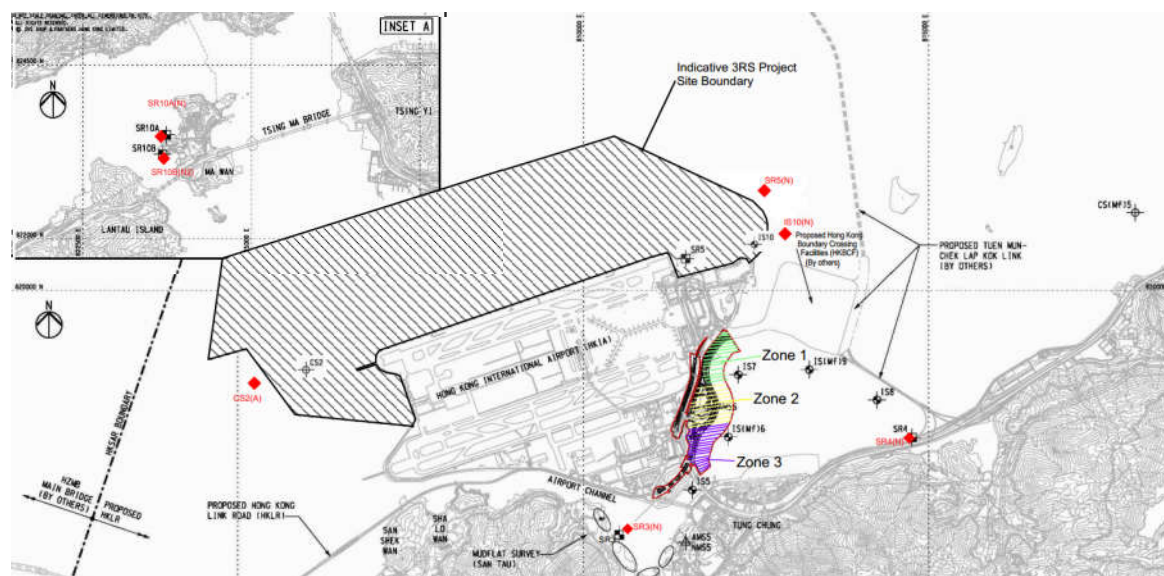
Title : ET Leader

Date : 7 September 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities Notifications of Environmental Quality Limits Exceedances						Notification No.: 281s ver1	
Date of Notification: 15 August 2018							
Works Inspected: Data collected from water sampling works on 8 August 2018 and the test report was issued on 15 August 2018.							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	IS8	DA	23.5 and 120% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 6.27 x 120% = 7.5 for mid ebb; CS(Mf)5: 10.52 x 120% = 12.6 for mid flood)	34.4 and 130% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 6.27 x 130% = 8.1 for mid ebb; CS(Mf)5: 10.52 x 130% = 13.7 for mid flood)	3.0	26.8	
Notes: 1) DA means depth average. 2) <i>Bold Italic</i> means AL exceedances. 3) <i><u>Bold Italic with underline</u></i> means LL exceedances.							
Possible reasons for Action Level Non-compliance: On 8 August 2018, an Action Level exceedance of suspended solid was recorded at station IS8 during mid-flood tide. The exceedance has been investigated and is considered unlikely to be related to the contract works due to the following reasons: 1. Seawall construction at Zones 2 and 3 were carried out on 8 August 2018. As confirmed by the Contractor, seawall construction at Zones 2 and 3 were carried out within the properly deployed silt curtain as recommended in the EIA Report. 2. The ranges of suspended solid at station IS8 during the baseline monitoring are shown as below:							
Station		Range of Suspended Solid (mg/L) Mid-Ebb Tide			Range of Suspended Solid (mg/L) Mid-Flood Tide		
IS8		5.5 to 25.5			5.8 to 31.3		
The measured value for mid-flood tide at station IS8 was within the range of suspended solid for mid-flood tide during baseline monitoring.							
3. During sampling exercise, water appearance was observed moderate (water appearance was observed neither clear nor turbid) at station IS8. There was no marine transportation near station IS8 during sampling period and no marine works were conducted near station IS8 which is located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise.							
4. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results. As such, the exceedance of suspended solid level is considered to be attributed to other external factors such as sea condition, rather than the contract works.							
Actions taken/ to be taken: As the suspended solid level recorded beyond the water quality criteria was not related to the contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure that the silt curtain is fully maintained throughout the construction works and construction works are carried out under stringent supervision to prevent any water quality impacts to the seawater.							

Location Plan:



Reviewed by : Claudine Lee

Title : ET Leader

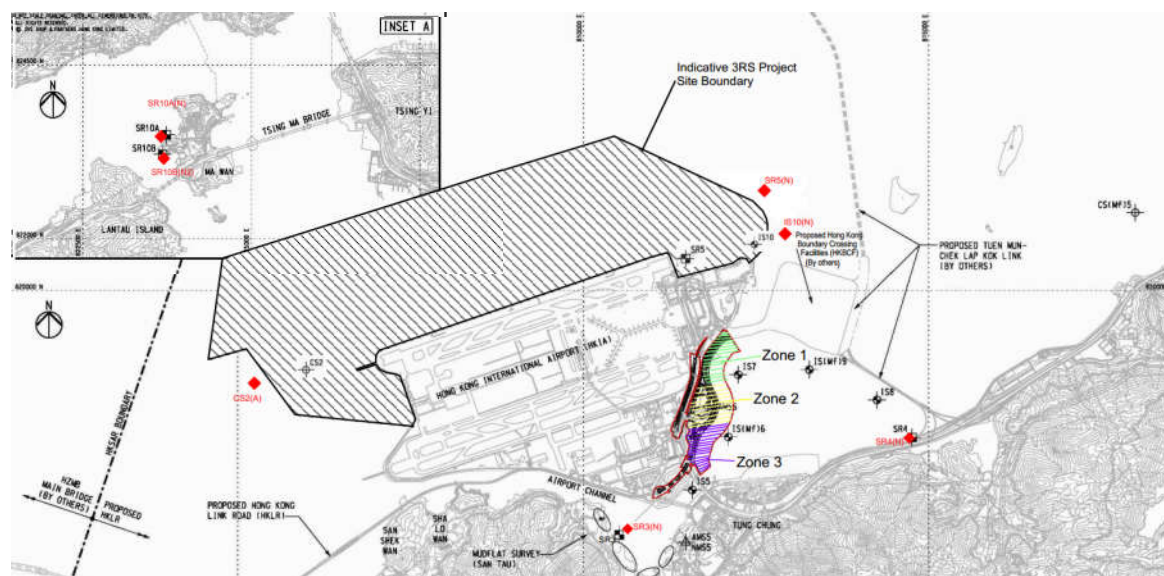
Claudine Lee

Date : 7 September 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities Notifications of Environmental Quality Limits Exceedances							Notification No.: 282s ver 0
Date of Notification: 16 August 2018							
Works Inspected: Data collected from water sampling works on 10 August 2018 and the test report was issued on 16 August 2018.							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	IS8	DA	23.5 and 120% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 11.35 x 120% = 13.6 for mid ebb; CS(Mf)5: (See Note 4)	34.4 and 130% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 11.35 x 130% = 14.8 for mid ebb; CS(Mf)5: (See Note 4)	25.8	See Note 4.	
Notes: 1) DA means depth average. 2) <i>Bold Italic</i> means AL exceedances. 3) <i><u>Bold Italic with underline</u></i> means LL exceedances. 4) Due to Thunderstorm Warning issued by the Hong Kong Observatory, the water quality monitoring for flood tide on 10 August 2018 was cancelled at these stations.							
Possible reasons for Action Level Non-compliance: On 10 August 2018, an Action Level exceedance of suspended solid was recorded at station IS8 during mid-ebb tide. The exceedance has been investigated and is considered unlikely to be related to the contract works due to the following reasons: 1. Seawall construction at Zones 2 and 3 were carried out on 10 August 2018. As confirmed by the Contractor, seawall construction at Zones 2 and 3 were carried out within the properly deployed silt curtain as recommended in the EIA Report. 2. The ranges of suspended solid at station IS8 during the baseline monitoring are shown as below:							
Station		Range of Suspended Solid (mg/L) Mid-Ebb Tide		Range of Suspended Solid (mg/L) Mid-Flood Tide			
IS8		5.5 to 25.5		5.8 to 31.3			
The measured value for mid-flood tide at station IS8 was slightly above the range of suspended solid for mid-ebb tide during baseline monitoring.							
3. However, water appearance was observed clear at station IS8 during sampling exercise. There was no marine transportation near station IS8 during sampling period and no marine works were conducted near station IS8 which is located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise.							
4. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results. As such, the exceedance of suspended solid level is considered to be attributed to other external factors such as sea condition, rather than the contract works.							
Actions taken/ to be taken: As the suspended solid level recorded beyond the water quality criteria was not related to the contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure that the silt curtain is fully maintained throughout the construction works and construction works are carried out under stringent supervision to prevent any water quality impacts to the seawater.							

Location Plan:



Reviewed by : Claudine Lee

Title : ET Leader

Date : 4 September 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Date of Notification: 24 August 2018

Works Inspected: Data collected from water sampling works on 13 August 2018 and the results were issued on 24 August 2018

Monitoring Location: Water Quality Monitoring Stations

Parameter: Dissolved Oxygen (DO)/ ~~Suspended Solids (SS)~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
DO	IS10(N)	Surface and Middle	5.0	4.2	4.8	4.9
DO	SR5(N)	Surface and Middle	5.0	4.2	4.8	4.8
DO	SR10A(N)	Surface and Middle	5.0	5.0	<u>4.7</u>	<u>4.8</u>
DO	SR10B(N2)	Surface and Middle	5.0	5.0	<u>4.7</u>	<u>4.9</u>
DO	SR10A(N)	Bottom	4.7	3.6	4.6	4.7
DO	SR10B(N2)	Bottom	4.7	3.6	4.6	4.8

Notes:
1) ***Bold Italic*** means AL exceedances.
2) ***Bold Italic with underline*** means LL exceedances.

Possible reasons for Action Level / Limit Level Non-compliance:

On 13 August 2018, Action Level exceedances of dissolved oxygen were recorded at stations IS10(N), SR5(N), SR10A(N) and SR10B(N2) during the mid-ebb tide; Action Level exceedances of dissolved oxygen were recorded at stations IS10(N) and SR5(N) during mid-flood tide; Limit Level exceedances of dissolved oxygen were recorded at stations SR10A(N) and SR10B(N2) during mid-ebb tide and mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:

- Seawall construction at Zones 2 and 3 were carried out on 13 August 2018. As confirmed by the Contractor, seawall construction at Zones 2 and 3 were carried out within the properly deployed silt curtain as recommended in the EIA Report. According to Contractor's information, there was no marine transportation near stations IS10(N), SR5(N), SR10A(N) and SR10B(N2) during sampling period and no marine works were conducted near IS10(N), SR5(N), SR10A(N) and SR10B(N2) which are located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise.
- The range of dissolved oxygen at stations IS10, SR5, SR10A and SR10B during the baseline monitoring is shown as below:

Stations	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide	
IS10	Surface and Middle	5.0	to 7.2	5.0	to 7.6
SR5	Surface and Middle	5.1	to 7.3	4.8	to 7.4
SR10A	Surface and Middle	4.8	to 8.3	5.3	to 7.5
SR10B	Surface and Middle	5.2	to 9.0	5.0	to 8.4

SR10A	Bottom	4.8	to	7.5	5.1	to	7.8
SR10B	Bottom	5.6	to	9.3	4.9	to	7.6

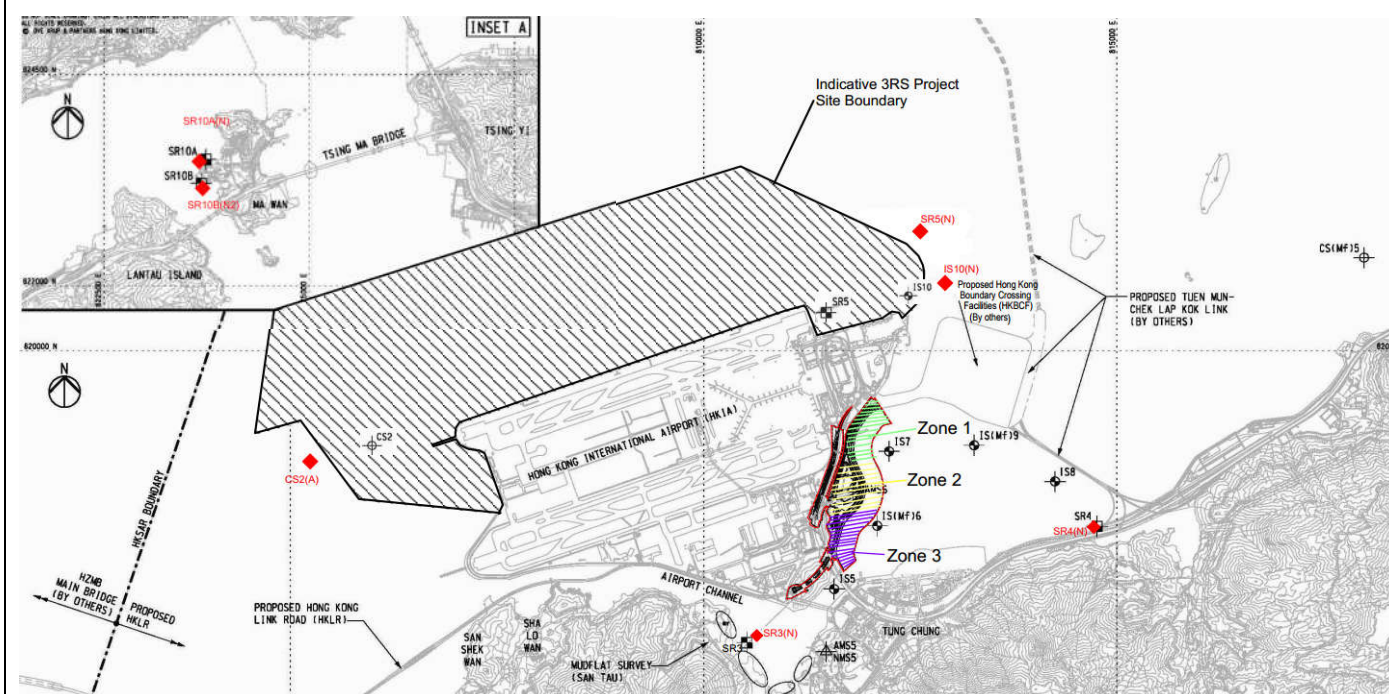
On 13 August 2018, the measured value of dissolved oxygen for surface and middle level at station SR5(N) during the mid-flood tide was within the range of the baseline monitoring. The measured value of dissolved oxygen for surface and middle level at stations IS10(N), SR10A(N) and SR10B(N2) during mid-ebb and mid-flood tide; for surface and middle level at station SR5(N) during mid-ebb tide; for bottom level at stations SR10A(N) and SR10B(N2) during the mid-ebb tide were below the range of the baseline monitoring.

- However, there were no specific activities recorded during the monitoring period that would cause any significant impact on the monitoring results. As such, the exceedances in DO level are considered to be attributed to other external factors rather than the contract works.

Actions taken/ to be taken:

As the DO level recorded beyond the water quality criteria was not related to contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure the silt curtain is fully maintained throughout the construction works and construction works are under stringer supervision to prevent any water quality impacts to the seawater.

Location Plan:



Reviewed by : Claudine Lee

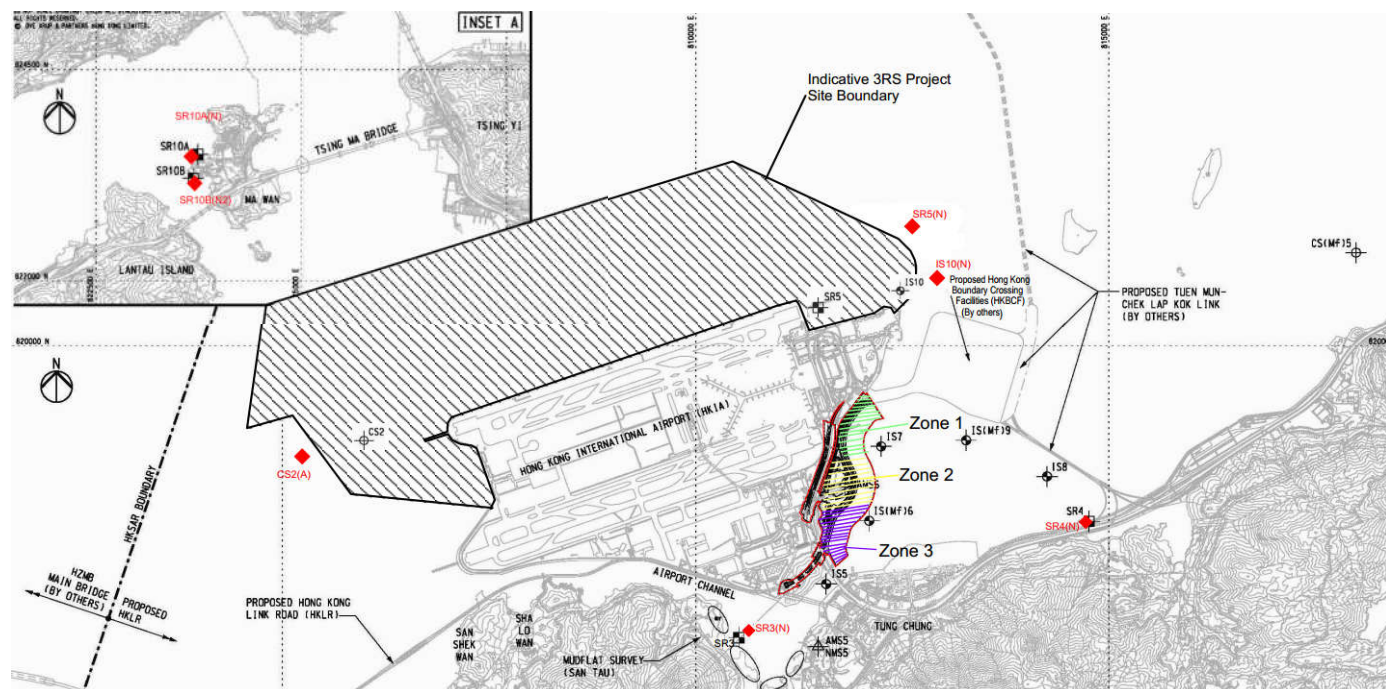
Title : ET Leader

Date : 4 September 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities Notifications of Environmental Quality Limits Exceedances					Notification No.: 284 ver0																									
Date of Notification: 24 August 2018																														
Works Inspected: Data collected from water sampling works on 15 August 2018 and the results were issued on 24 August 2018																														
Monitoring Location: Water Quality Monitoring Stations																														
Parameter: Dissolved Oxygen (DO)/ Suspended Solids (SS) / Turbidity (TURB)																														
Action & Limit Level (AL & LL) / Measured Level:																														
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)																								
DO	IS10(N)	Surface and Middle	5.0	4.2	5.2	4.9																								
DO	SR5(N)	Surface and Middle	5.0	4.2	5.2	4.9																								
DO	SR10A(N)	Surface and Middle	5.0	5.0	<u>4.9</u>	5.0																								
Notes: 1) <i>Bold Italic</i> means AL exceedances. 2) <u><i>Bold Italic with underline</i></u> means LL exceedances.																														
Possible reasons for Action Level / Limit Level Non-compliance:																														
On 15 August 2018, Action Level exceedances of dissolved oxygen were recorded at stations IS10(N) and SR5(N) during mid-flood tide. A Limit Level exceedance of dissolved oxygen was recorded at SR10A(N). The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:																														
1. Seawall construction at Zones 2 and 3 were carried out on15 August 2018. As confirmed by the Contractor, seawall construction at Zones 2 and 3 were carried out within the properly deployed silt curtain as recommended in the EIA Report. According to Contractor's information, there was no marine transportation near stations IS10(N), SR5(N) and SR10A(N) during sampling period and no marine works were conducted near stations IS10(N), SR5(N) and SR10A(N) which are located outside the site boundary of HKLR03 Contract. No abnormality or malpractice for the contract works was observed during the sampling exercise.																														
2. The range of dissolved oxygen at stations IS10 and SR5 during the baseline monitoring is shown as below:																														
<table><tr><td>Stations</td><td>Depth</td><td colspan="2">Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide</td><td colspan="2">Range of Dissolved Oxygen (mg/L) Mid-Flood Tide</td></tr><tr><td>IS10</td><td>Surface and Middle</td><td>5.0</td><td>to 7.2</td><td>5.0</td><td>to 7.6</td></tr><tr><td>SR5</td><td>Surface and Middle</td><td>5.1</td><td>to 7.3</td><td>4.8</td><td>to 7.4</td></tr><tr><td>SR10A</td><td>Surface and Middle</td><td>4.8</td><td>to 8.3</td><td>5.3</td><td>to 7.5</td></tr></table>							Stations	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide		IS10	Surface and Middle	5.0	to 7.2	5.0	to 7.6	SR5	Surface and Middle	5.1	to 7.3	4.8	to 7.4	SR10A	Surface and Middle	4.8	to 8.3	5.3	to 7.5
Stations	Depth	Range of Dissolved Oxygen (mg/L) Mid-Ebb Tide		Range of Dissolved Oxygen (mg/L) Mid-Flood Tide																										
IS10	Surface and Middle	5.0	to 7.2	5.0	to 7.6																									
SR5	Surface and Middle	5.1	to 7.3	4.8	to 7.4																									
SR10A	Surface and Middle	4.8	to 8.3	5.3	to 7.5																									
On 15 August 2018, the measured value of dissolved oxygen for surface and middle level at station SR5(N) during mid-flood tide and at station SR10A(N) during mid-ebb tide were within the range of the baseline monitoring. The measured value of dissolved oxygen for surface and middle level at station IS10(N) during the mid-flood tide was below the range of the baseline monitoring.																														
3. However, there were no specific activities recorded during the monitoring period that would cause any significant impact on the monitoring results. As such, the exceedances in DO level are considered to be attributed to other external factors rather than the contract works.																														
Actions taken/ to be taken: As the DO level recorded beyond the water quality criteria was not related to contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure the silt curtain is fully maintained throughout the construction works and construction works are under stringer supervision to prevent any water quality impacts to the seawater.																														

Location Plan:



Reviewed by : Claudine Lee

Title : ET Leader

Date : 4 September 2018

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Date of Notification: 3 September 2018

Works Inspected: Not Applicable

Monitoring Location: NEL & NWL

Parameter: Ecology (Chinese White Dolphin Monitoring)

Action & Limit Levels			Monitoring Results
	North Lantau Social Cluster		The quarter of June 2018 – August 2018
	Action Level (AL)	Limit Level (LL)	
Northeast Lantau (NEL)	STG < 4.2 & ANI < 15.5	NEL: (STG < 2.4 & ANI < 8.9) and	<u>STG = 0; ANI = 0</u>
Northwest Lantau (NWL)	STG < 6.9 & ANI < 31.3	NWL: (STG < 3.9 & ANI < 17.9)	<u>STG = 1.16; ANI = 2.87</u>

Notes:

1. STG means quarterly encounter rate of number of dolphin sightings.
2. ANI means quarterly encounter rate of total number of dolphins.
3. For North Lantau Social Cluster, AL will be triggered if either NEL or NWL falls below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.
4. ***Bold Italic*** means AL exceedances.
5. ***Bold Italic with underline*** means LL exceedances

Possible reason for Limit Level Non-compliance:

There was a Limit Level exceedance of dolphin monitoring for the quarterly monitoring data (between June 2018 – August 2018). According to the contractor's information, the marine activities undertaken for HKLR03 during the quarter of June 2018 – August 2018 included seawall construction and box culvert construction.

There is no evidence showing the current LL non-compliance directly related to the construction works of HKLR03 (where the amounts of working vessels for HKLR03 have been decreasing), although the generally increased amount of vessel traffic in NEL during the impact phase has been partly contributed by HKLR03 works since October 2012. It should also be noted that reclamation work under HKLR03 (adjoining the Airport Island) situates in waters which has rarely been used by dolphins in the past, and the working vessels under HKLR03 have been travelling from source to destination in accordance with the Marine Travel Route to minimize impacts on Chinese White Dolphin (CWD). In addition, the contractor will implement proactive mitigation measures such as avoiding anchoring at Marine Department's designated anchorage site – Sham Shui Kok Anchorage (near Brothers Island) as far as practicable.

According to Monitoring of Chinese White Dolphins in Southwest Lantau Waters – Fourth Quarterly Report (December 2015 to February 2016) which is available on ENPO's website, with their primary ranges centered in North and West Lantau waters, some individuals showed apparent range shifts or extensions to Southwest Lantau waters in 2015-16. For example, three individual dolphins (NL120, WL46 and WL221) indicated obvious shifts in their range use from NWL to West Lantau (WL) and Southwest Lantau (SWL) waters. Moreover, many individuals (e.g. NL212, NL260, WL200, SL55, WL232, WL237 and WL265) have extended their ranges from WL waters to SWL waters. It remains to be seen whether some of these individuals have permanently shifted their ranges away from their primary ranges in North Lantau, or begin to spend more times in SWL waters as part of their ranges.

ENPO updated that the Hong Kong-Zhuhai-Macao Bridge Authority (HZMBA) for the Mainland section of Hong Kong-Zhuhai-Macao Bridge (HZMB) has commenced an interim survey on fisheries resources and CWD in the Mainland waters. ENPO presented the preliminary findings of the HZMBA interim survey on CWD sighting and photo-identification works which provide solid evidence that some CWD that were previously more often sighted in HK waters have expanded their ranges into the Mainland waters, and some with reduced usage in HK waters. These preliminary data were mentioned in Monitoring of Chinese White Dolphins in Southwest Lantau Waters – Fourth Quarterly Report (December 2015 to February 2016) which is available on ENPO's website.

Actions taken/ to be taken:

Inform the IEC, ENPO, ER/SOR and Contractor

The ETL informed IEC, ENPO, SOR and Contractor via email on 3 September 2018.

Repeat statistical data analysis to confirm findings and check monitoring data:

A two-way ANOVA with repeated measures and unequal sample size was conducted to examine whether there were any significant differences in the average encounter rates between the baseline and impact monitoring periods. The two variables that were examined included the two periods (baseline and impact phases) and two locations (NEL and NWL).

For the comparison between the baseline period and the present quarter (23rd quarter of the impact phase being assessed), the p-values for the differences in average dolphin encounter rates of STG and ANI were 0.0022 and 0.0144 respectively. If the alpha value is set at 0.05, significant differences were detected between the baseline and present quarters in both the average dolphin encounter rates of STG and ANI.

For comparison between the baseline period and the cumulative quarters in impact phase (i.e. first 23 quarters of the impact

phase being assessed), the p-values for the differences in average dolphin encounter rates of STG and ANI were 0.000000 and 0.000000 respectively. Even if the alpha value is set at 0.00001, significant differences were still detected in both the average dolphin encounter rates of STG and ANI (i.e. between the two periods and the locations).

Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences:

The AFCD monitoring data during June to August 2018 has been reviewed by the dolphin specialist. During the same quarter, no dolphin was sighted from 88.04 km of survey effort on primary lines in NEL, while only two groups of two dolphins were sighted from 54.81 km of survey effort on primary lines in NWL. This review has confirmed that the low occurrence of dolphins reported by the HKLR03 monitoring surveys in summer 2018 in NEL and NWL survey area is accurate.

Recommendations/ mitigation measures/ actions if necessary:

Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary:

All dolphin protective measures are fully and properly implemented in accordance with the EM&A Manual. According to the Regular Marine Travel Route Plan, the travelling speed of vessels must not exceed 5 knots when crossing the edge of the marine park. The Contractor will continue to provide training for skippers to ensure that their working vessels travel from source to destination to minimize impacts on Chinese White Dolphin and avoid anchoring at Marine Department's designated anchorage site - Sham Shui Kok Anchorage (near Brothers Island) as far as practicable. Also, it is recommended to complete the marine works of the Contract as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.

A meeting was held on 4 September 2018 with attendance of representative of ENPO, Resident Site Staff (RSS), Environmental Team (ET) and dolphin specialist for Contract Nos. HY/2013/01, HY/2011/03, HY/2012/07, HY/2012/08. The discussion/ recommendation as raised in the meeting which might be relevant to HKLR03 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 nor separate from the other stress factors.

The dolphin specialists of the projects confirmed that the CWD sighting around the North of Sha Chau and Lung Kwu Chau Marine Park (SCLKCMP) has significantly decreased, and it was likely related to the re-routing of high speed ferry (HSF) from SkyPier.

It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to ensure the relevant measures were fully implemented.

It was recommended that the marine works of HZMB projects should be completed as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.

It was also recommended that the marine works footprint (e.g., reduce the size of peripheral silt curtain) 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.

HyD updated that the draft map of the proposed Brothers Marine Park (BMP) was gazetted in February 2016. ENPO updated that the BMP was approved by the Chief Executive in the Executive Council in August 2016. The ETs were reminded to update the BMP boundary in the Regular Marine Travel Route (RMTR) Plan. The BMP was designated on 30 December 2016. It was suggested that the protection measures (e.g. speed limit control) for the approved BMP shall be brought forward so as to provide a better habitat for dolphin recovery. It was noted that under the latest RMTR Plan, the contractors have committed to reduce the vessel speed in BMP.

The marine travel route will shift along the edge of Brother Marine Park as much as practical under the RMTR Plan. It was noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP.

It was reminded that starting from January 2016, HSF from the SkyPier will be re-routed north to the northern edged of the Sha Chau and Lung Kwu Chau Marine Park which currently has the highest density of CWD in the NWL. While the HSF will reduce speed to 15 knots, the associated disturbance may still affect CWD in the area. It was implied that the CWDs in the area shall be closely followed.

There was a discussion on exploring possible further mitigation measures, for example, controlling the underwater noise. It was noted that the EIA reports for the projects suggested several mitigation measures, all of which have been implemented.

Reviewed by : Claudine Lee

Title : ET Leader



Date : 27 November 2018

Copied to : Supervising Officer, ENPO, IEC, EPD, Contractor

Summary of Notifications of Summons and Prosecutions

Total No. of Notifications of Summons / Prosecutions Received	No. of Notifications of Summons / Prosecutions Received during Reporting Period	Status of Notifications of Summons / Prosecutions
0	0	N/A