

Table J1 *Cumulative Statistics on Exceedances*

Monitoring Parameters	Action/Limit Level	Total No. recorded in this reporting quarter	Total No. recorded since project commencement
1-Hr TSP	Action	3	26
	Limit	0	2
24-Hr TSP	Action	0	5
	Limit	0	1
Water Quality	Action	1	6
	Limit	1	1
Impact Dolphin Monitoring	Action	2	3
	Limit	0	0

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 (Mar 2014 to May 2014)	1	0	0
Total No. received since project commencement	1	0	0

Email
message

Environmental
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To ENVIRON - Hong Kong, Limited (ENPO)

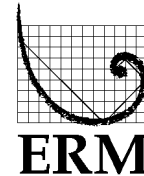
From ERM- Hong Kong, Limited

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 24 July 2014

16/F DCH Commercial Centre,
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com



Dear Sir or Madam,

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

0212330_Mar2014/May2014_dolphin_STG&ANI_NEL
0212330_Mar2014/May2014_dolphin_STG&ANI_NWL

A total of two action level exceedances were recorded in the quarterly impact
dolphin monitoring data between March 2014 and May 2014.

Regards,

Mr Jovy Tam
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Impact Dolphin Monitoring Notification of Exceedance

Log No.	0212330_Mar2014/May2014_dolphin_STG&ANI_NEL 0212330_Mar2014/May2014_dolphin_STG&ANI_NWL [Total No. of Exceedances = 2]	
Date	March 2014 to May 2014 (monitored) 08 July 2014 (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 = 0.0 & ANI = 0.0
	NWL	STG = 6.5 & ANI = 19.1
	Two Action Level Exceedances are recorded in the quarterly impact dolphin monitoring at NEL and NWL between March 2014 and May 2014. The exceedances were reported in the approved <i>Seventh Monthly EM&A Report</i> dated 13 June 2014.	
Statistical Analyses	<p>Further to the review of the available and relevant dolphin monitoring data in the EM&A under this Contract, statistical analyses were conducted as follows:</p> <ul style="list-style-type: none"> A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present quarter, March to May 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.1$ as the significance level in the statistical tests, significant difference in STG ($p = 0.0337$) and in ANI ($p = 0.0535$) between Period were detected. A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters*, October 2012 to February 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.1$ as the significance level in the statistical tests, significant difference in STG ($p = 0.0080$) and in ANI ($p = 0.0032$) between Cumulative Period and Location were detected. <p>*Note: The commencement date under <i>Contract No. HY/2012/08</i> is 1 November 2013.</p>	
Works Undertaken (in the monitoring quarter)	<p>In the quarter between March 2014 and May 2014, the major marine works under <i>Contract No. HY/2012/08</i> included:</p> <ul style="list-style-type: none"> Dredging works at Portions N-B and N-C Vertical seawall and sloping seawall constructions at Portions N-B and N-C Reclamation Filling at Portion N-A Marine sheet piling for box culvert extension at Portion N-A 	

Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are considered not caused by the Project, in view of the following:</p> <ul style="list-style-type: none"> • According to the long-term monitoring results of marine mammals collected by AFCD, the Chinese White Dolphin (CWD) <i>Sousa chinensis</i> in spring months (March to May) are usually ranging in waters in north Lantau and outer Deep Bay, but less frequently in NEL. • The <i>Monitoring of Marine Mammals in Hong Kong Waters (2013 – 14)</i> ⁽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 project), which is likely a contributing factor for the decrease in dolphin abundances in NEL. • As per the findings from the EIA report (Section 8.11.9), the major influences on the CWD are marine traffics, dredging works and reclamation/filling works. The Contractor has implemented the marine traffic control as per the requirements in the EP-354/2009/B and the updated EM&A Manual. Likewise, dredging works were undertaken within the working rate described in the EP and the approved EIA Report by a closed grab dredger with silt curtains being deployed throughout the dredging period. Filling works were undertaken within 200m leading seawall throughout the filling period and the working rate described in the EP and the approved EIA Report were strictly followed. After reviewing of the daily dredging and filling records, all daily dredging and filling work rates in this quarter are under the maximum work rate described in the EP. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed. • According to the findings of the approved EIA report (Section 8.11.9), dredging and filling works are expected to increase the level of suspended solids (SS) in the vicinity waters of the project, which would lead to indirect loss of prey availability and increase in level of bioaccumulative contaminants in CWD. According to the findings in the quarterly water monitoring results between March and May 2014, the impact mean level of SS (Mid-ebb: 4.3 mg/L; Mid-flood: 4.5 mg/L) in this quarter is well below of the baseline mean level of SS (Mid-ebb: 10.0 mg/L; Mid-flood: 10.3 mg/L). This would imply that no unacceptable impact on SS levels was associated with the marine works under this Contract, and thus no indirect impacts on marine habitat quality due to change in water quality is observed in this Contract. • Seasonal variation in individual ranging pattern which has been well documented in the literatures ^{(2) (3)}.
Actions Taken/ To Be Taken	<p>With reference to the site inspection records in this quarter, the respective marine ecological mitigation measures (including 250 m dolphin exclusion zone, passive acoustic monitoring, underwater acoustic decoupling plan and marine traffic control) have been implemented properly by the Contractor throughout the marine works period. No immediate additional action is considered necessary. The ET will monitor for future trends in exceedance(s).</p>
Remarks	<p>The results of impact water quality and impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved <i>Fifth to Seventh EM&A Monthly Reports</i>.</p>

(1) Hung SKY (2014). Prepared for AFCD. Available from:

http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html

(2) Jefferson & Hung (2010) A review of the status of the Indo-Pacific Humpback Dolphin (*Sousa chinensis*) in Chinese Waters. *Aquatic Mammals* (30): 149 – 158.

(3) Chen et al., (2010) Distribution, abundance, and individual movements of Indo-Pacific humpback dolphins (*Sousa chinensis*) in the Pearl River Estuary, China. *Mammalia* (74): 117 – 125.