

Email
message

**Environmental
Resources
Management**

To ENVIRON - Hong Kong, Limited (ENPO)

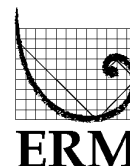
From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07 Tuen Mun–Chek Lap
Kok Link–Southern Connection Viaduct Section

Subject Notification of Exceedance for Impact Dolphin
Monitoring

Date 4 August 2014

16/F Berkshire House,
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.:

0215660_Mar2014/May2014_dolphin_STG&ANI_NEL
0215660_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,

A handwritten signature in black ink, appearing to be "Jovy Tam", written in a cursive style.

Mr Jovy Tam
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

**TUEN MUN – CHEK LAP KOK LINK –
SOUTHERN CONNECTION VIADUCT SECTION**

**Impact Dolphin Monitoring
Notification of Exceedance**

Log No.	0215660_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
	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 Seventh Monthly EM&A Report 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) 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 baseline and present quarter 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/2012/07</i> is 31 October 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/2012/07</i> included:</p> <ul style="list-style-type: none"> ● Survey tower erection; ● Marine piling platform installation; ● Marine Piling at Viaduct B; and ● Construction of rockfill platform at Viaduct D landing. 	

Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedance is considered to be the natural variation of Chinese white dolphin (CWD) <i>Sousa chinensis</i> ranging pattern and unlikely to be due to 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 and bored piling 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, bored piling works were undertaken within the working rate described in the EP and the approved EIA Report. After reviewing of the daily bored piling records, all daily bored piling 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. • Dolphin Exclusion Zone (DEZ) was implemented strictly as the EP Condition 3.1 and EM&A Manual during the period. The implementation details were recorded in the approved monthly reports from March to May. No sighting of dolphin in DEZ was recorded in the reporting quarter. • 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, marine bored piling 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.

Appendix L1 Cumulative Statistics on Exceedances

		Total No. recorded in this quarter	Total No. recorded since project commencement
1-Hr TSP	Action	0	0
	Limit	0	0
24-Hr TSP	Action	0	2
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality	Action	0	1
	Limit	0	0
Impact Dolphin Monitoring	Action	2	3
	Limit	0	0

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This quarter	0	0	0
Total No. received since project commencement	1	0	0