


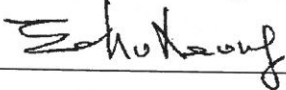
China Harbour Engineering Company Limited

Contract No. HY/2010/02

**Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing
Facilities –
Reclamation Works**

**Quarterly EM&A Report for
June 2014- August 2014**

[01/2015]

	Name	Signature
Prepared & Checked:	Y T Tang	
Reviewed, Approved and Certified:	Echo Leong (ETL)	

Version:	Rev. 0	Date: 12 January 2015
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Disclaimer

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AECOM Asia Co. Ltd.
15/F, Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong
Tel: (852) 3922 9000 Fax: (852) 2317 7609 www.aecom.com

Ref.: HYDHZMBEEM00_0_2614L.15

12 January 2015

Engineer's Representative
Ove Arup & Partners
Chief Resident Engineer's Office
5 Ying Hei Road, Tung Chung, Lantau
Hong Kong

By Fax (3698 5999) and By Post

Attention: Mr. Roger Marechal

Dear Sir,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities,
and Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2010/02 HZMB HKBCF – Reclamation Works
Quarterly Environmental Monitoring & Audit Report for June 2014 to August 2014**

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring & Audit Report for June 2014 to August 2014 (letter ref: 60249820/C/RMKY15011201 dated 12 January 2015) copied to us by E-mail on 12 January 2015.

We are pleased to inform you that we have no adverse comment on the captioned Quarterly EM&A Report. We write to verify the captioned report in accordance with Condition 5.4 of EP-353/2009/G and Condition 4.4 of EP-354/2009/C (for TM-CLKL Southern Landfall Reclamation only).

ET is reminded to submit the proposed modelling analyses on/before the completion date as stated in this report.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Wai-ping Lee	(By Fax: 3188 6614)
	AECOM	Ms. Echo Leong	(By Fax: 2317 7609)
	CHEC	Mr. Lim Kim Chuan	(By Fax: 2578 0413)

Internal: DY, YH, JM, ENPO Site

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EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as “the Project”) mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL). It is a designated project and is governed by the current permits for the Project, i.e. the amended Environmental Permits (EPs) issued on 06 August 2013 (EP-353/2009/G) and 28 January 2014 (EP-354/2009/B) (for TMCLKL Southern Landfall Reclamation only).

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project’s reclamation works (i.e. the Engineer for the Project).

China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.

ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016. The EM&A programme, including air quality, noise, water quality and dolphin monitoring and environmental site inspections, was commenced on 12 March 2012.

This report documents the findings of EM&A works conducted in the period between 1 June 2014 and 31 August 2014. As informed by the Contractor, major activities in the reporting quarter were:-

Marine-based Works

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Optimizing rubble mound seawalls
- Conforming sloping seawalls
- Sand blanket laying
- Sand filling
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction along access at Portion D
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

A summary of monitoring and audit activities conducted in the reporting quarter is listed below:

24-hour Total Suspended Particulates (TSP) monitoring	16 sessions
1-hour TSP monitoring	16 sessions
Noise monitoring	13 sessions
Impact water quality monitoring	39 sessions
Impact dolphin monitoring	6 surveys
Joint Environmental site inspection	13 sessions

Breaches of Action and Limit Levels for Air Quality

All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting period.

Breaches of Action and Limit Levels for Noise

For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

Breaches of Action and Limit Levels for Water Quality

Fourteen (14) Action Level Exceedances were recorded at measured dissolved oxygen (DO) value (mg L^{-1}).

During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 and; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 and; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 exceeded the Action Level.

After investigation, it is unlikely that the DO exceedances are related to the marine construction activities of this Contract.

Breaches of Action and Limit Levels for Impact Dolphin Monitoring

One (1) Limit Level exceedance was recorded for Chinese White Dolphin monitoring in the reporting quarter.

Triggering of Event Action Plan for Impact Dolphin Monitoring

Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.

Implementation Status and Review of Environmental Mitigation Measures

Most of the recommended mitigation measures, as included in the EM&A programme, were implemented properly in the reporting quarter.

The recommended environmental mitigation measures effectively minimize the potential environmental impacts from the Project. The EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.

Complaint, Notification of Summons and Successful Prosecution

Three (3) environmental complaints have been received in reporting quarter.

As informed by the Contractor on 3 July 2014, there was an environmental complaint received on 13 June 14. The complainant who lived at Caribbean Coast complained that there were night time noise and visual impact (strong lighting) from the overnight construction works/plants of HKBCF Island. After investigation, the part of the complaint which is related to visual impact is likely to be related to the construction works of this contract. However, with referred to the available information, it is concluded that the part of the complaint which is related to night time noise is unlikely to be related to this Contract.

As informed by the Contractor on 23 July 14, a complaint has been received from Oriental Daily Newspaper on 22 July 14. In the complaint, Oriental Daily Newspaper stated that Miss Cheung, who is a resident of Miami Beach Towers (Tuen Mun), pointed out that construction was being conducted at the sea area in front of the estate, a lot of sand delivery barges were moored at sea area between Castle Peak Beach (Tuen Mun Typhoon Shelter) and Tuen Mun Ferry Pier. She discovered on several occasions that there were leakage of soil from sand delivery barges causing discoloration of sea water and sometimes, leaking of sand from more than two sand delivery barges at a time was observed. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

No notification of summons or prosecution was received in the reporting quarter.

1 INTRODUCTION

1.1 Background

- 1.1.1 Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kog Boundary Crossing Facilities – Reclamation Work (here below, known as “the Project”) mainly comprises seawall construction and reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL).
- 1.1.2 The environmental impact assessment (EIA) reports (Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – EIA Report (Register No. AEIAR-145/2009) (HKBCFEIA) and Tuen Mun – Chek Lap Kok Link – EIA Report (Register No. AEIAR-146/2009) (TMCLKLEIA), and their environmental monitoring and audit (EM&A) Manuals (original EM&A Manuals), for the Project were approved by Environmental Protection Department (EPD) in October 2009.
- 1.1.3 EPD subsequently issued the Environmental Permit (EP) for HKBCF in November 2009 (EP-353/2009) and the Variation of Environmental Permit (VEP) in June 2010 (EP-353/2009/A), November 2010 (EP-353/2009/B), November 2011 (EP-353/2009/C), March 2012 (EP-353/2009/D), October 2012 (EP-353/2009/E), April 2013 (EP-353/2009/F) and August 2013 (EP-353/2009/G). Similarly, EPD issued the Environmental Permit (EP) for TMCLKL in November 2009 (EP-354/2009) and the Variation of Environmental Permit (VEP) in December 2010 (EP-354/2009/A) and January 2014 (EP-354/2009/B).
- 1.1.4 The Project is a designated project and is governed by the current permits for the Project, i.e. the amended EPs issued on 6 August 2013 (EP-353/2009/G) and 28 January 2014 (EP-354/2009/B) (for TMCLKL Southern Landfall Reclamation only).
- 1.1.5 A Project Specific EM&A Manual, which included all project-relation contents from the original EM&A Manuals for the Project, was issued in May 2012.
- 1.1.6 Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project’s reclamation works (i.e. the Engineer for the Project).
- 1.1.7 China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.
- 1.1.8 ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.
- 1.1.9 AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the EM&A works.
- 1.1.10 The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016.
- 1.1.11 According to the Project Specific EM&A Manual, there is a need of an EM&A programme including air quality, noise, water quality and dolphin monitoring and environmental site inspections. The EM&A programme of the Project commenced on 12 March 2012.

1.2 Scope of Report

- 1.2.1 This is the tenth quarterly EM&A Report under the Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Project from 1 June 2014 to 31 August 2014.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer's Representative (ER) (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	Roger Marechal	2528 3031	2668 3970
IEC / ENPO (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3548 6988
	Environmental Project Office Leader	Y.H. Hui	3465 2868	3465 2899
Contractor (China Harbour Engineering Company Limited)	General Manager (S&E)	Daniel Leung	3157 1086	2578 0413
	Environmental Officer	Richard Ng	36932253	2578 0413
	24-hour Hotline	Alan C.C. Yeung	9448 0325	--
ET (AECOM Asia Company Limited)	ET Leader	Echo Leong	3922 9280	2317 7609

1.4 Summary of Construction Works

1.4.1 The construction phase of the Project under the EP commenced on 12 March 2012.

1.4.2 As informed by the Contractor, details of the major works carried out in the reporting quarter are listed below:-

Marine-based Works

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Optimizing rubble mound seawalls
- Conforming sloping seawalls
- Sand blanket laying
- Sand filling
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction along access at Portion D
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup
- Connecting arc cell installation
- Laying geo-textile
- Optimizing rubble mound seawalls
- Conforming sloping seawalls
- Sand filling
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Construction of temporary seawall
- Portion D Construction of Access to Portion A
- Surcharge laying
- Construction of temporary pier at Portion A
- Precast Yard setup
- Seawall blocks for temporary construction
- Vibro-compaction on surcharge
- Construction of conveyors for public fill
- Temporary bridge at Portion D

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

1.4.3 The 3-month rolling construction programme of the Project is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the detailed works areas is shown in Figure 1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

2.1 Monitoring Parameters

- 2.1.1 The Project Specific EM&A Manual designated 4 air quality monitoring stations, 2 noise monitoring stations, 21 water monitoring stations (9 Impact Stations, 7 Sensitive Receiver Stations and 5 Control/Far Field Stations) to monitor environmental impacts on air quality, noise and water quality respectively. Pre-set and fixed transect line vessel based dolphin survey was required in two AFCD designated areas (Northeast and Northwest Lantau survey areas). The impact dolphin monitoring at each survey area should be conducted twice per month.
- 2.1.2 For impact air quality monitoring, monitoring locations AMS2 (Tung Chung Development Pier) and AMS7 (Hong Kong SkyCity Marriott Hotel) were set up at the proposed locations in accordance with Project Specific EM&A Manual. The conditional omission of Monitoring Station AMS6 was effective since 19 November 2012. For monitoring location AMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact air quality monitoring was conducted at site boundary of the site office area in Works Area WA2 (AMS3B) respectively. Same baseline and Action Level for air quality, as derived from the baseline monitoring data recorded at Ho Yu College, was adopted for this alternative air quality location.
- 2.1.3 For impact noise monitoring, monitoring locations NMS2 (Seaview Crescent Tower 1) was set up at the proposed locations in accordance with Project Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact noise monitoring was conducted at site boundary of the site office area in Works Area WA2 (NMS3B) respectively. Same baseline noise level, as derived from the baseline monitoring data recorded at Ho Yu College was adopted for this alternative noise monitoring location.
- 2.1.4 In accordance with the Project Specific EM&A Manual, twenty-one stations were designated for impact water quality monitoring. The nine Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the seven Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the five Control/ Far Field Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Project/ ambient water quality conditions.
- 2.1.5 Due to safety concern and topographical condition of the original locations of SR4 and SR10B, alternative impact water quality monitoring stations, naming as SR4(N) and SR10B(N), were adopted, which are situated in vicinity of the original impact water quality monitoring stations (SR4 and SR10B) and could be reachable. Same baseline and Action Level for water quality, as derived from the baseline monitoring data recorded, were adopted for these alternative impact water quality monitoring stations.
- 2.1.6 The monitoring locations used during the reporting quarter are depicted in Figures 2, 3 and 4 respectively.
- 2.1.7 The Project Specific EM&A Manual also required environmental site inspections for air quality, noise, water quality, chemical, waste management, marine ecology and landscape and visual impact.

2.2 Environmental Quality Performance (Action/Limit Levels)

- 2.2.1 The environmental quality performance limits (i.e. Action and/or Limit Levels) of air and water quality monitoring were derived from the baseline air and water quality monitoring results at the respective monitoring stations, while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.
- 2.2.2 The environmental quality performance limits of air quality, noise and water monitoring are given in Appendix D.

2.3 Environmental Mitigation Measures

- 2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EPs (EP-353/2009/G and EP-354/2009/B) (for TMCLKL Southern Landfall Reclamation only) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

3 MONITORING RESULTS

3.1 Air Quality Monitoring

- 3.1.1 In accordance with the Project Specific EM&A Manual, impact 1-hour Total Suspended Particulates (TSP) monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days at the 4 monitoring stations (AMS2, AMS3B, AMS6 and AMS7).
- 3.1.2 The monitoring locations for impact air quality monitoring are depicted in Figure 2. However, for AMS6 (Dragonair/CNAC (Group) Building), permission on setting up and carrying out impact monitoring works was sought, however, access to the premise has not been granted yet on this report issuing date.
- 3.1.3 The weather was mostly sunny, with occasional cloudy and occasional rainy in the reporting quarter. The major dust source in the reporting quarter included construction activities from the Project, as well as nearby traffic emissions.
- 3.1.4 The number of monitoring events and exceedances recorded in each month of the reporting quarter are presented in Table 3.1 and Table 3.2 respectively.

Table 3.1 Summary of Number of Monitoring Events for 1-hr & 24-hr TSP Concentration

Monitoring Parameter	Location	No. of monitoring events		
		June 14	July 14	August 14
1-hr TSP	AMS2	15	18	15
	AMS3B	15	18	15
	AMS7	15	18	15
24-hr TSP	AMS2	5	6	5
	AMS3B	5	6	5
	AMS7	5	6	5

Table 3.2 Summary of Number of Exceedances for 1-hr & 24-hr TSP Monitoring

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			June 14	July 14	August 14
1-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3B	Action	0	0	0
		Limit	0	0	0
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	0	0	0
24-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3B	Action	0	0	0
		Limit	0	0	0
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	0	0	0

- 3.1.5 All 1-Hour TSP and 24Hr TSP results were below the Action and Limit Level in the reporting month.
- 3.1.6 The event action plan is annexed in Appendix K.
- 3.1.7 Meteorological information collected from the wind station during the monitoring periods on the monitoring dates, as shown in Figure 2, including wind speed and wind direction, is annexed in Appendix H of monthly EM&A report June, July and August 2014 respectively.

3.2 Noise Monitoring

- 3.2.1 Impact noise monitoring was conducted at the 2 monitoring stations (NMS2 and NMS3B) for at least once per week during 07:00 – 19:00 in the reporting quarter.
- 3.2.2 The monitoring locations used during the reporting quarter are depicted in Figure 2.
- 3.2.3 No Action or Limit Level Exceedance of construction noise was recorded in the reporting quarter.
- 3.2.4 Major noise sources during the noise monitoring included construction activities of the Project and nearby traffic noise.
- 3.2.5 The number of impact noise monitoring events and exceedances are summarized in Table 3.3 and Table 3.4 respectively

Table 3.3 Summary of Number of Monitoring Events for Impact Noise

Monitoring Parameter	Location	No. of monitoring events		
		June 14	July 14	August 14
	NMS2	4	5	4
	NMS3B	4	5	4

Table 3.4 Summary of Number of Monitoring Exceedances for Impact Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			June 14	July 14	August 14
	NMS2	Action	0	0	0
		Limit	0	0	0
	NMS3B	Action	0	0	0
		Limit	0	0	0
		Total	0	0	0

- 3.2.6 The graphical plots of the trends of the monitoring results are provided in Appendix F. No specific trend of the monitoring results or existence of persistent pollution source was noted.
- 3.2.7 The event action plan is annexed in Appendix K.

3.3 Water Quality Monitoring

3.3.1 The monitoring locations used during the reporting quarter are depicted in Figure 3.

3.3.2 Fourteen (14) Action Level Exceedances were recorded at measured dissolved oxygen (DO) value (mg L⁻¹) During ebb tide on 15 August 2014, surface and middle DO in mg L⁻¹ recorded at IS(Mf)11, IS10 and SR5; bottom DO in mg L⁻¹ recorded at IS(Mf)11 and IS10 exceeded the Action Level. During flood tide on 15 August 2014, surface and middle DO in mg L⁻¹ recorded at IS(Mf)11, IS10, SR5, SR6 and SR7; bottom DO in mg L⁻¹ recorded at IS(Mf)11, IS10, SR5 and SR6 exceeded the Action Level.

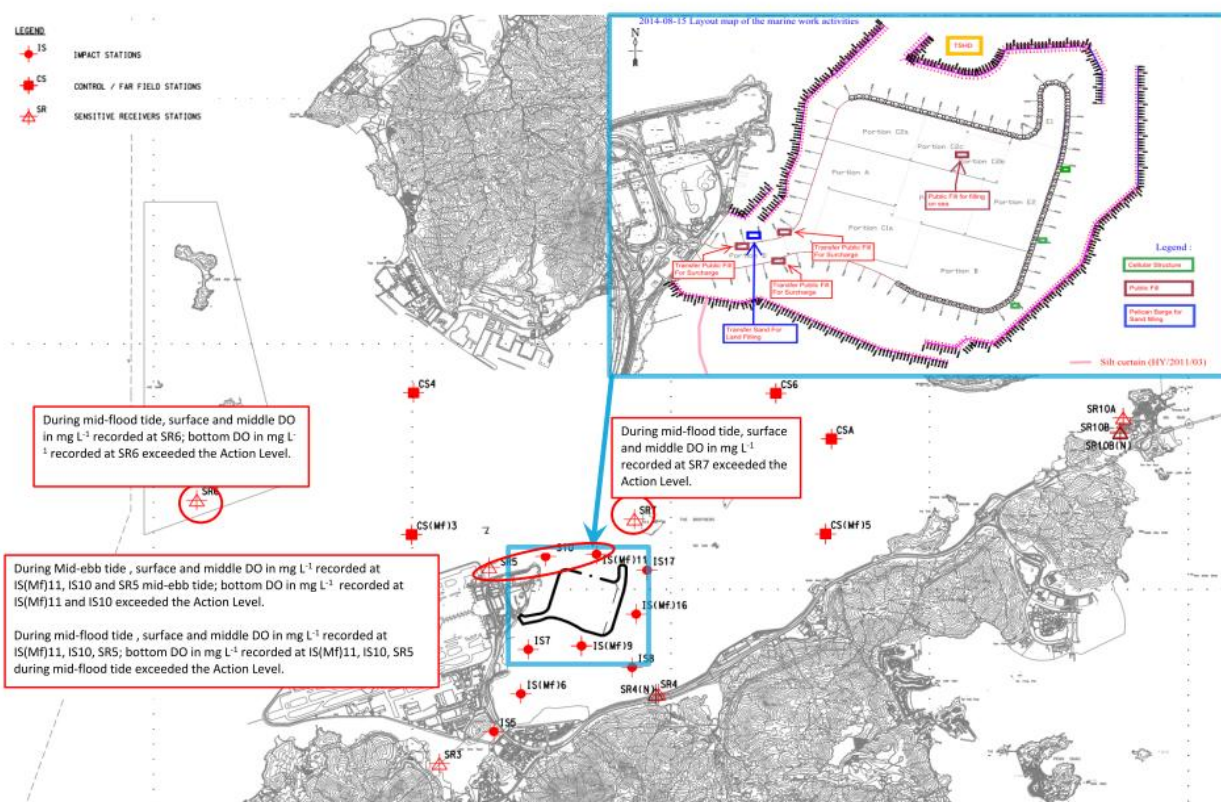
Table 3.5 Summary of Water Quality Exceedances in June 2014 – August 2014

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS8	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	(1) 15 Aug ust 14	(1) 15 August 14	(1) 15 Aug ust 14	(1) 15 August 14	0	0	0	0	2	2
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	(1) 15 Aug ust 14	(1) 15 August 14	(1) 15 Aug ust 14	(1) 15 August 14	0	0	0	0	2	2
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	(1) 15 Aug ust 14	(1) 15 August 14	0	(1) 15 August 14	0	0	0	0	1	2
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	(1) 15 August 14	0	(1) 15 August 14	0	0	0	0	0	2
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	(1) 15 August 14	0	0	0	0	0	0	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
SR10A	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10B	Action	0	0	0	0	0	0	0	0	0	0

Station (N)	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
	Limit	0	0	0	0	0	0	0	0	0	0
Total	Action	3	5	2	4	0	0	0	0	14	
	Limit	0	0	0	0	0	0	0	0	0	

Note: S: Surface;
 M: Mid-depth;

3.3.3 Fourteen (14) Action Level Exceedances were recorded at measured dissolved oxygen (DO) value (mg L^{-1}) on 15 August 2014. During Mid-ebb tide on, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 exceeded the Action Level.



3.3.3.1 For marine works, marine filling was conducted at portion C2b during flood and ebb tide at area behind cellular structures on 15 Aug 2014. Also refer to above layout map.

3.3.3.2 Exceedance was not due to marine based construction works of the Project because:

3.3.3.3 With reference to the silt curtain checking record defects was observed at north parts of the perimeter silt curtain and at southwest entrance of the perimeter silt curtain.

3.3.3.4 As informed by the Contractor, filling was conducted on 13, 15 and 18 August 2014 at Portion C2b, but with referred to monitoring record and photo record attached, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed. Please refer to the photo attached for reference of the sea condition during ebb tide and flood tide on 15 August 2014.

- 3.3.3.5 Photo record of sea condition taken during ebb tide at north of HKBCF Reclamation Works near IS(Mf)11, IS10 and SR5 on 15 August 2014.



- 3.3.3.6 Photo record of sea condition taken during flood tide at north of HKBCF Reclamation Works near IS(Mf)11, IS10 and SR5 on 15 August 2014.



- 3.3.3.7 Construction activities were reviewed, almost the same marine works were conducted at almost the same location on 13, 15 and 18 August 2014, but no DO exceedance was recorded on 13 and 18 August 2014. This indicates that the DO exceedances were unlikely to attribute to marine works of this Contract.
- 3.3.3.8 Low DO value was observed at upstream control station during ebb tide. DA DO (surface & middle) were 5.3mg/L and 5.2 mg/L at CS(Mf)3 and CS4 during ebb tide. DO (bottom) were 4.8mg/L and

4.6mg/L at CS(Mf)3 and CSA respectively. This indicates that low DO (Surface & middle; Bottom) occurred at locations upstream to HKBCF Reclamation Works during ebb tide.

3.3.3.9 Low DO value was observed at upstream control station during flood tide. DA DO (surface & middle) were 5.2mg/L, 4.7 mg/L and 4.6 mg/L at CS(Mf)5, CS6 and CSA during ebb tide. DO (bottom) were 5.3mg/L, 4.5 mg/L and 4.1mg/L at CS(Mf)5, CS6 and CSA respectively. This indicates low DO (Surface & middle; Bottom) occurred at locations upstream to HKBCF Reclamation Works during flood tide.

3.3.3.10 After investigation, the Action Level exceedance of the surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 during Mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 during Mid-ebb tide; surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide were unlikely to attribute to construction works of this Contract.

3.3.3.11 Action taken under the action plan

- in situ measurement was repeated to confirm findings;
- After considering the above mentioned investigation results, it appears that it was unlikely that the DO exceedances were not attributed to active construction activities of this project;
- Monitoring data, all plant, equipment and Contractor's working methods were checked;
- Since it is considered that the DO exceedances are unlikely to be project related, as such, actions 5 - 7 under the EAP are not considered applicable.

3.3.3.12 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

3.3.3.13 With reference to the silt curtain checking record on 27 August 2014, the defect observed on 15 August 2014 at north part of the perimeter silt curtain has been repaired. As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.4 The event action plan is annexed in Appendix K.

3.4 Dolphin Monitoring

- 3.4.1 In accordance with the Project Specific EM&A Manual, pre-set and fixed transect line vessel based dolphin survey was required in two AFCD designated areas (Northeast Lantau (NEL) and Northwest Lantau (NWL) survey areas). The impact dolphin monitoring at each survey area should be conducted twice per month.
- 3.4.2 The impact dolphin monitoring conducted is vessel-based and combines line-transect and photo-ID methodology, which have adopted similar survey methodologies as that adopted during baseline monitoring to facilitate comparisons between datasets.
- 3.4.3 The layout map of impact dolphin monitoring have been provided by AFCD and is shown in Figure 4.
- 3.4.4 The effort summary and sighting details during the reporting quarter are shown in the Appendix H. A summary of key findings of the dolphin surveys completed during the reporting quarter is shown below:

Table 3.6 Summary of Key Dolphin Survey Findings in June – August 2014

Number of Impact Surveys Completed [^]	6
Survey Distance Travelled under Favourable On- Effort Condition	661.1km
Number of Sightings	27 sightings (17 sightings are "on effort" (which are all under favourable condition), 10 "sightings are opportunistic")
Number of dolphin individual sighted	87 individuals (the best estimated group size)
Dolphin Encounter Rate#	NEL: 0.5 NWL: 3.6
Dolphin Group Size	Average of NEL: 1.0 Average of NWL: 3.2 Varied from 1-15 individuals
Most Often frequent dolphin sighting area	Sha Chau and Lung Kwu Chau Marine Park, the western limit of NWL and Tai O area.

Remarks:

[^] Completion of line transect survey of NEL and NWL survey area once was counted as one complete survey.

Dolphin Encounter Rate = (Sum of 1st, 2nd, 3rd month's total sighting/ Sum of 1st, 2nd, 3rd month's total effort)*100km (encounter rates are calculated using on effort sightings made under favourable conditions only.)

- 3.4.5 One (1) Limit Level exceedance was recorded in the reporting quarter. The investigation results showed that there is no evidence that exceedance is related to Project works are annexed in Appendix L. Actions were taken according to the Event Action Plan for impact dolphin monitoring. Please refer to Appendix L for details of action taken.

Table 3.7 Summary of STG and ANI encounter rates in June - August 2014

	NEL	NWL	Level Exceeded
STG*	0.5	0.5	Limit
ANI**	3.6	10.9	

*Quarterly Average Encounter Rate of Number of Dolphin Sightings (STG) presents averaged encounter rates of the three monitored months in terms of groups per 100km per survey event.

STG Encounter rate = (Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 1st month+ Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 2nd month + Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 3rd month)/3*100km

**Quarterly Average Encounter Rate of Total Number of Dolphins (ANI) presents averaged encounter rates of the three monitored months in terms of individuals per 100km per survey event.

ANI Encounter rate = (Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 1st month+ Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 2nd month + Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 3rd month +)/3*100km

3.4.6 Details of the comparison and analysis methodology and their findings and discussions are annexed in Appendix H.

3.5 Environmental Site Inspection and Audit

3.5.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. In the reporting quarter, 12 site inspections were carried out. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

3.5.2 Particular observations during the site inspections are described below:

Air Quality

3.5.3 Dark smoke was observed generated by excavator. The Contractor was reminded to regularly maintain the plants to avoid generation of dark smoke. The Contractor prevented generation of dark smoke by plant. (Closed)

3.5.4 Dust control measures such as water car was observed. However the Contractor was reminded to review the need to enhance current dust control measures. (Reminder)

3.5.5 Public fill/exposed soil was observed, surface was kept moist. However, the Contractor was reminded to continue to provide dust control measures to exposed soil. (Reminder)

3.5.6 Fugitive dust was observed generated when excavator was drove through a road; the Contractor was reminded to provide dust control measures. Dust control measures such as watering was provided on the road. (Closed)

3.5.7 It was observed that the water supply of the sprinkler system at Portion D was disconnected. The Contractor was reminded to provide effective dust control measures to the road at Portion D. The Contractor provided effective dust control measures to the road at Portion D. (Closed)

3.5.8 Fugitive dust was observed when vehicle was drove through the road at Portion D. The Contractor was reminded to provide effective dust control measures. The Contractor provided effective dust control measures to the road at Portion D. (Closed)

3.5.9 Filling was observed. The Contractor was reminded to ensure proper implementation of relevant mitigation measures for sand blanket filling or reclamation filling. (Reminder)

Noise

3.5.10 No adverse observation was identified in the reporting quarter.

Chinese White Dolphin

3.5.11 No adverse observation was identified in the reporting quarter.

Water Quality

3.5.12 Oil drum and idle air compressor were observed without drip tray on reclamation work. The Contractor was reminded to provide enough drip trays for oil drum. The Contractor provided enough drip trays for oil drum or removed the oil drum and the Contractor relocated the air compressor. (Closed)

- 3.5.13 Waste at waste collection point, generator and oil drums were observed partially submerged into sea water. The Contractor was advised to put the collected waste, generator and oil drums to higher ground to prevent the situation at near barge 天駿 3 and at near at Portion B. Waste at waste collection point, generator and oil drums were moved to higher ground. (Closed)
- 3.5.14 Water was observed accumulated inside the wheel washing facility; the Contractor was reminded to review and prevent potential overflow of silty water. (Reminder)
- 3.5.15 It was observed that the drainage located next to the road of WA2 was blocked by material fallen off from the lid of the drainage, the Contractor was reminded to unblock the drainage. The Contractor unblocked the drainage. (Closed)
- 3.5.16 Oil drum was observed without drip tray on barge Evershine 18. The Contractor was advised to provide mitigation measures such as drip tray to oil drum. As informed by the Contractor, the barge Evershine 18 left the site area the Contractor was reminded to provide mitigation measures such as drip tray to oil drum when it starts to operate on site. (Reminder)
- 3.5.17 Oil drum was observed without drip tray. The Contractor was advised to provide mitigation measures such as drip tray to oil drum. Contractor relocated the oil drum. (Closed)
- 3.5.18 It was observed that compressors were not provided with drip tray at Portion A. The Contractor was reminded to provide mitigation measures such as drip tray to compressors at Portion A. The Contractor cleared the compressors. (Closed)
- 3.5.19 Oil stain has been observed inside the water of one steel cell when inspection conducted between steel cell 53 – 58. Oil stain was cleared by the Contractor using oil absorbent materials and used oil absorbent materials were disposed of as chemical waste. (Closed)
- 3.5.20 Oil drums were observed without drip tray or bunding on barge GD851 and at area between Portion C1b and Portion A, the Contractor was reminded to provide mitigation measures such as drip tray or bunding to all oil drums. Drip tray or bunding was provided to oil drums on barge GD851 by the Contractor and Oil drum at area between Portion C1b and Portion A was removed by the Contractor. (Closed)
- 3.5.21 Defect (holes and deformed frame of drip tray) was observed within drip tray at area between Portion C1b and Portion A. The Contractor was reminded to provide proper mitigation measure such as drip tray without defect to oil drum and PMEs. The Contractor rectified large majority of the defects (holes and deformed frame of drip tray) observed within drip tray at area between Portion C1b and Portion A. The Contractor provided proper mitigation measure such as drip tray without defect to PME in September 2014. (Closed)

3.5.22

Chemical and Waste Management

- 3.5.23 General refuse and unwanted band drain material were observed at various locations of the reclamation work. The Contractor was reminded to clear the and properly dispose these wastes of regularly. The general refuse and unwanted band drain materials were cleared and disposed of by the Contractor. (Closed)
- 3.5.24 Unwanted/used Band drain materials were observed at various locations. The Contractor was reminded to collect and clear the unwanted/used band drain materials regularly and keep the site clean and tidy. The Contractor cleared the general refuse and used band drain materials. (Closed)
- 3.5.25 General refuses were observed at Portion C, works area WA2; general refuses and band drain material were observed at various locations of portion D; unwanted/used band drain material was observed at Portion C. The Contractor was reminded to review, collect and dispose the refuse regularly to keep the site clean and tidy. The Contractor collected and disposed the refuse regularly to keep the site clean and tidy. (Closed)

- 3.5.26 Rubbish bin without cover or lid was observed at Works Area WA2. The Contractor was reminded to properly cover all rubbish bins. The Contractor removed the rubbish bin without cover or lid. (Closed)
- 3.5.27 General refuse were observed area near steel cell 48, various locations when inspection was conducted at portion B and Portion D and on water at Portion D. The Contractor was reminded to regularly clear the general refuse to keep the site clean and tidy. The Contractor cleared the general refuse to keep the site clean and tidy. (Closed)

Landscape and Visual Impact

- 3.5.28 No relevant works was carried out in the reporting Quarter.

Others

- 3.5.29 Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

4 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

4.1 Summary of Solid and Liquid Waste Management

- 4.1.1 The Contractor registered as a chemical waste producer for this project. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 4.1.2 As advised by the Contractor, 3,433,181.4m³ of fill were imported for the Project use in the reporting period. 336kg of paper/cardboard packaging, 3kg of metals, 1kg of plastics, 9,000kg of chemical waste, 448.5m³ of general refuse were generated and disposed of in the reporting period. Summary of waste flow table is detailed in Appendix I.
- 4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

5 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status of Environmental Mitigation Measures

- 5.1.1 In response to the site audit findings, the Contractors carried out corrective actions.
- 5.1.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C. Most of the recommended mitigation measures are being upheld. Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.
- 5.1.3 Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly.
- 5.1.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity Check), regular checks were conducted by experienced MMOs within the works area to ensure that no dolphins were trapped by the silt curtain area. There were no dolphins spotted within the silt curtain during this quarter. The relevant procedures were followed and all measures were well implemented. The silt curtains were also inspected in accordance to the submitted plan.
- 5.1.5 Acoustic decoupling measures on noisy plants on construction vessels were checked regularly and the Contractor was reminded to ensure provision of ongoing maintenance to noisy plants and to carry out improvement work once insufficient acoustic decoupling measures were found.
- 5.1.6 Frequency of watering per day on exposed soil was checked; with reference to the record provided by the Contract, watering was conducted at least 8 times per day on reclaimed land. The frequency of watering is the mainly refer to water truck. Sprinklers are only served to strengthen dust control measure for busy traffic at the entrance of Portion D. As informed by the Contractor, during the malfunction period of sprinkler, water truck will enhance watering at such area. The Contractor was reminded to ensure provision of watering of at least 8 times per day on all exposed soil within the Project site and associated works areas throughout the construction phase.
- 5.1.7 Noted from contractor's report during the last Site Safety and Environmental Management Committee meeting on 21 August 2014, a number of sprinklers are missing/ damaged on 31 July 2014. Subsequently, with refer to the site inspection and checking record issued on 6 August 2014, the missing and damaged sprinkler was rectified on 6 August 2014.
- 5.1.8 Oil spillage observed on 14 and 20 August 2014 at Steel cell 54. Spill Response Plan was followed by the Contractor.
- 5.1.8.1 Following the spill response plan, ET, IEC and the RSS were informed of the incident by the Contractor and the Contractor used absorption booms to contain and remove the floating oil from water and absorption booms used was collected using disposal bags as part of the spill kits item. The used absorption booms were disposed of as chemical waste.
- 5.1.8.2 The source of the oil spill was identified on 14 August 2014 as a discrete, non-continuous source with approximately less than 15m² spread. The cause of the oil spill was not identified due to no continuous runoff was observed after inspection.
- 5.1.8.3 The source of the oil spill was identified on 20 August 2014 as continuous source with approximately less than 15m² spread.
- 5.1.8.4 The oil spillage identified on 20 August 2014 was caused by overflow of nearby oil container which tightly closed lids to chemical container was not provided to avoid leakage of chemicals and chemical waste. The oil container which caused the oil spillage was relocated and transferred by the Contractor to designated oil storage area.

- 5.1.8.5 Similar to the oil stain observed on 20 August 2014, the oil stain on 14 August 2014 was also found at steel cell 54, it was considered that the source of the oil stain observed inside steel cell 54 on 14 and 20 August 2014 are likely to be the same and is likely to be caused by overflow of nearby oil container which without proper cover. On both incidents, the oil stain was confined by steel cell 54.
- 5.1.8.6 Monitoring record of 15, 18 and 20 August 2014 have been reviewed. There are action level exceedances of DO recorded on 15 August 2014, but they are not considered as related to this contract. For details of the DO exceedances occurred on 15 August 2014, please refer to section 4.7.3. The action level exceedances of DO occurred at area located north to the HKBCF Reclamation Works which is far away from the cell 54 located at southeast of the HKBCF Reclamation Works. It is unlikely that the DO exceedances were associated with the oil spillage occurred at steel cell no.54.
- 5.1.8.7 In addition, there was no exceedance recorded at monitoring station IS(Mf)16 which is the closest to steel cell 54 which indicates it is unlikely that water quality is affected by the oil spillage occurred at steel cell 54.
- 5.1.8.8 Site inspection was conducted jointly with the ESS and the RSS on 21 August 2014. No oil spillage was further observed on site.
- 5.1.8.9 Recommendation:
- The Contractor was reminded to keep chemical and chemical waste containers in good condition and free from corrosion and damage which may impair the performance of the containers.
 - The Contractor was reminded to provide tightly closed lids to chemical container so as to avoid leakage of chemicals and chemical waste. In addition, the Contractor was reminded to ensure every chemical and chemical waste containers securely closed or sealed, correctly placed and kept clean.
 - The contractor was reminded to continue to follow the spill response plan in the event of accidental oil spillage.

6 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

6.1 Summary of Exceedances of the Environmental Quality Performance Limit

- 6.1.1 All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting period.
- 6.1.2 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.
- 6.1.3 Fourteen (14) Action Level Exceedances were recorded at measured dissolved oxygen (DO) value (mg L^{-1}). During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 and; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 and; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 exceeded the Action Level. After investigation, it is unlikely that the DO exceedances are related to the marine construction activities of this Contract.
- 6.1.4 One (1) limit level exceedance of Chinese White Dolphin monitoring was recorded in the reporting quarter. Investigation results show that there is no evidence that exceedance is related to Project works. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.
- 6.1.5 Cumulative statistics on exceedances is provided in Appendix J.

7 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

7.1 Summary of Environmental Complaints, Notification of Summons and Successful Prosecutions

7.1.1 The Environmental Complaint Handling Procedure is annexed in Figure 5.

7.1.2 Three (3) environmental complaints have been received in reporting quarter.

7.1.3 As informed by the Contractor on 3 July 2014, there was an environmental complaint received on 13 June 14. The complainant who lived at Caribbean Coast complained that there were night time noise and visual impact (strong lighting) from the overnight construction works/plants of HKBCF Island. After investigation, the part of the complaint which is related to visual impact is likely to be related to the construction works of this contract. However, with referred to the available information, it is concluded that the part of the complaint which is related to night time noise is unlikely to be related to this Contract.

7.1.3.1 Photo record of site condition and CNP compliance checking records of 1- 13 Jun 2014 have been reviewed; please see the following for details of investigation actions and results.

7.1.3.2 For the part of the complaint which is related to visual impact:

- After reviewing the available information provided by the complainant, the source of light is likely from lighting system for the construction works conducted at night.
- With referred to the photo record below, there is measure to control night-time lighting and glare such as hooding lights, please see below photo record of hooding of lights.



- In addition, as informed by the Contractor, construction works would be carried out at night in order to be in line with the progress of this project, however, the Contractor has arranged major activities to be performed during the day time to minimize works in the night time.
- As such, the visual impact complaint is likely to be related to the construction works of this Contract.
- As informed by the Contractor, all the night-lighting is movable and would be moved according to the reclamation progress. However, all the night-lighting has been provided with hooding.
- The Contractor was reminded to continue to properly implement existing mitigation measure for visual impact such as provide night-lighting with hooding.
- In addition, the Contractor was recommended to adjust the orientation of light to minimize glare to residence as far as possible.

7.1.3.3 For the part of the complaint which is related to noise:

- As informed by the Contractor, Construction Noise Permit (CNP) was granted by EPD to cover works carry out during restricted hours in order to be in compliance with relevant environmental regulations and requirements.
- Compliance checking records of 1- 13 Jun 2014 provided by the Contractor were reviewed and record shows construction works carried out were in compliance with the CNP in effect.
- As such, with referred to the available information, it is concluded that the night time noise complaint is unlikely to be related to this Contract.
- Nevertheless, the Contractor was reminded to continue to properly implement all noise mitigation measures.

7.1.3.4 Recommendations:

- The Contractor was reminded to refer environmental complaint to ET for investigation as soon as possible after receiving environmental complaint.

For the part of the complaint which is related to visual impact:

- The Contractor was reminded to continue to properly implement existing mitigation measure for visual impact such as provide night-lighting with hooding.
- In addition, the Contractor was recommended to adjust the orientation of light to minimize glare to residence as far as possible.
- Photo record on 16 July 2014 shows that the recommended mitigation measures has been implemented by the Contractor:



For the part of the complaint which is related to noise:

- The Contractor was reminded to continue to properly implement all noise mitigation measures.

7.1.4 As informed by the Contractor on 23 July 14, a complaint has been received from Oriental Daily Newspaper on 22 July 14. In the complaint, Oriental Daily Newspaper stated that Miss Cheung, who is a resident of Miami Beach Towers (Tuen Mun), pointed out that construction was being conducted at the sea area in front of the estate, a lot of sand delivery barges were moored at sea area between Castle Peak Beach (Tuen Mun Typhoon Shelter) and Tuen Mun Ferry Pier. She discovered on several occasions that there were leakage of soil from sand delivery barges causing discoloration of sea water and sometimes, leaking of sand from more than two sand delivery barges at a time was observed.

7.1.4.1 Impact water quality monitoring data of July 14 has been reviewed and site inspections were conducted jointly on 24 and 31 July 14 with RSS and the Contractor.

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the IWQM results available for July 14 for monitoring stations close to the concerned area - IS12, IS13, IS14, IS15 have been reviewed and there were no impact water quality monitoring result that shows the turbidity or suspended solid of sea water were adversely affected.
- In addition, site inspection has been jointly conducted with the Contractor and RSS on 24 and 31 July 2014, but no leakage of soil/sand material from barges causing discoloration of sea water was observed inside or outside the perimeter silt curtain of HKBCF reclamation works. Please see below the photos taken during site inspection for reference.
- Photo take on 24 July 14.



- Photo take on 31 July 14.



- As informed by the Contractor, overloading of sand on sand delivery barge is prohibited from runoff/overflow of sand material.

7.1.4.2 Conclusion: It is unable to confirm the date of the concerned impact from the information provided by the complainant, therefore the impact water quality monitoring result of July 14 has been reviewed but no result shows adverse impact to the water quality at the concerned area.

7.1.4.3 In addition, site inspection has been jointly conducted with RSS and the Contractor, but no leakage of soil/sand material from barges causing discoloration of sea water was observed inside or outside the perimeter silt curtain of HKBCF reclamation works.

7.1.4.4 After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

7.1.4.5 Recommendations: The Contractor was advised to ensure the provision of routine maintenance and prohibit overloading of sand material on delivery barges to prevent potential leakage of soil from sand delivery barges causing discoloration of sea water

7.1.5 As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust.

7.1.5.1 Investigation Actions:

- 1hr TSP and 24hrs TSP monitoring data of August 2014 have been reviewed.
- Site inspections were conducted jointly on 28 August 2014 with RSS and the Contractor.

7.1.5.2 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results available for August 2014 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was no impact air quality monitoring result that shows 1-hour TSP or 24-hour TSP exceeded the action (AL)/limit level (LL).
- Photo record below shows that Sand barges are equipped with watering equipments. And watering equipment was used to keep the sand filling material wet.

• ¹ Reviewed IAQM data and the action (AL)/limit level (LL) is available online respectively at:
http://www.hzmbenpo.com/php/list_air_year_All.php, and
http://www.hzmbenpo.com/emna_report/tmckl_hy201208/manual/html/toc.htm



- In addition, site inspection has been jointly conducted with the Contractor and RSS on 28 August 2014, but no generation of fugitive dust was observed to be caused by barges loaded with filling material.

7.1.5.3 After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

7.1.5.4 The Contractor was advised to ensure to continue the provision of fugitive dust mitigation measures to barges loaded with filling material such as watering to sand filling material on sand barges to keep the surface of stockpile of filling material wet.

7.1.6 No notification of summons or prosecution was received in the reporting quarter.

7.1.7 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix N.

8 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

8.1 Comments on mitigation measures

8.1.1 According to the environmental site inspections performed in the reporting quarter, the following recommendations were provided:

Air Quality Impact

- All working plants and vessels on site should be regularly inspected and properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained and reviewed to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement debagging, batching and mixing operations.
- Water spraying should be provided to suppress fugitive dust for any dusty construction activity.

Construction Noise Impact

- Quieter powered mechanical equipment should be used as far as possible.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Proper and effective noise control measures for operating equipment and machinery on-site should be provided, such as erection of movable noise barriers or enclosure for noisy plants. Closely check and replace the sound insulation materials regularly
- Vessels and equipment operating should be checked regularly and properly maintained.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Better scheduling of construction works to minimize noise nuisance.
- Acoustic decoupling measures should be properly implemented for all existing and incoming construction vessels with continuous and regularly checking to ensure effective implementation of acoustic decoupling measures.

Water Quality Impact

- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing of material.
- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/ desilted before discharged. Untreated effluent should be prevented from entering public drain channel.
- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.

Chemical and Waste Management

- All types of wastes, both on land and floating in the sea, should be collected and sorted properly and disposed of timely and properly. They should be properly stored in designated areas within works areas temporarily.
- All chemical containers and oil drums should be properly stored and labelled.
- All plants and vehicles on site should be properly maintained to prevent oil leakage.
- All kinds of maintenance works should be carried out within roofed, paved and confined areas.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil and chemical waste leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.
- Regular review should be conducted for working barges and patrol boats to ensure sufficient measures and spill control kits were provided on working barges and patrol boats to avoid any spreading of leaked oil/chemicals.

Landscape and Visual Impact

- All existing, retained/transplanted trees at the works areas should be properly fenced off and regularly inspected.

8.2 Recommendations on EM&A Programme

- 8.2.1 The impact monitoring programme for air quality, noise, water quality and dolphin ensured that any deterioration in environmental condition was readily detected and timely actions taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental impacts of the Project. With implementation of recommended effective environmental mitigation measures, the Project's environmental impacts were considered as environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.
- 8.2.2 The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the Project. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

8.3 Conclusions

- 8.3.1 The construction phase and EM&A programme of the Project commenced on 12 March 2012.
- 8.3.2 All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting monthperiod.
- 8.3.3 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.
- 8.3.4 Fourteen (14) Action Level Exceedancs were recorded at measured dissolved oxygen (DO) value (mg L^{-1})
- 8.3.5 During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 and; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 and; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 exceeded the Action Level. After investigation, it is unlikely that the DO exceedances are related to the marine construction activities of this Contract.
- 8.3.6 One (1) Limit Level exceedance was recorded for Chinese White Dolphin monitoring in the reporting quarter. Investigation results show that there is no evidence that exceedance is related to Project works.
- 8.3.7 Environmental site inspection was carried out twelfth times in the reporting quarter. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.
- 8.3.8 As informed by the Contractor on 3 July 2014, there was an environmental complaint received on 13 June 14. The complainant who lived at Caribbean Coast complained that there were night time noise and visual impact (strong lighting) from the overnight construction works/plants of HKBCF Island. After investigation, the part of the complaint which is related to visual impact is likely to be related to the construction works of this contract. However, with referred to the available information, it is concluded that the part of the complaint which is related to night time noise is unlikely to be related to this Contract.
- 8.3.9 As informed by the Contractor on 23 July 14, a complaint has been received from Oriental Daily Newspaper on 22 July 14. In the complaint, Oriental Daily Newspaper stated that Miss Cheung, who is a resident of Miami Beach Towers (Tuen Mun), pointed out that construction was being conducted at the sea area in front of the estate, a lot of sand delivery barges were moored at sea area between Castle Peak Beach (Tuen Mun Typhoon Shelter) and Tuen Mun Ferry Pier. She discovered on several occasions that there were leakage of soil from sand delivery barges causing discoloration of sea water and sometimes, leaking of sand from more than two sand delivery barges at a time was observed. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.
- 8.3.10 As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.
- 8.3.11 Apart from the above mentioned monitoring, most of the recommended mitigation measures, as included in the EM&A programme, were implemented properly in the reporting quarter.
- 8.3.12 The recommended environmental mitigation measures effectively minimize the potential environmental impacts from the Project. The EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

8.3.13 Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.