AECOM

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 September 2012- November 2012

[02/2013]

	Name	Signature
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ENVIRON

Ref.: HYDHZMBEEM00_0_0684L.13

7 February 2013

Engineer's Representative
Ove Arup & Partners
Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

By Fax (2268 3970) and By Post

Attention: Mr. Michael Lo

Dear Mr. Lo,

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
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities – Reclamation Work
Quarterly Environmental Monitoring & Audit Report for September to November 2012

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring & Audit Report for September to November 2012 (letter ref. 60249820/C/RMKY13020701 dated 7 February 2013) copied to us by E-mail on 7 February 2013.

Please be informed that we have no adverse comment on the captioned report.

In view of public attention on the dolphin monitoring, we would like to remind the Environmental Team Leader (ETL) and the dolphin specialist team as part of ET be well aware of their scope of responsibilities and focus on their tasks under the EM&A and the monthly or quarterly EM&A report should never be regarded by the ETL or their members as a platform to express their own opinions towards a government topic, or to advocate his/her personal ideas.

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. C M Wong	(By Fax: 2578 0413)

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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 16 Oct 2012 (EP-353/2009/E) and 8 December 2011 (EP-354/2009/A) (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 September 2012 and 30 November 2012. As informed by the Contractor, major activities in the reporting quarter were:-

Marine-based Works
- Maintenance of Silt curtain
- Silt curtain deployment and repairing
- Sand blanket trial
- Band drain installation trial
- Stone column installation
- Construction of cellular structure
- Backfill cellular structure

Land-based Works
- Site office erection and construction at Works Area WA2
- Hoarding erection at Work Areas Portion D and Works Area WA2
- Sign board erection at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2 and WA4
- Silt curtain fabrication at Works Area WA2;
- Stone column and cellular installation barges setup and their maintenance works at Works Area WA4

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

24-hour Total Suspended Particulates (TSP) monitoring	15 sessions
1-hour TSP monitoring	15 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

No Action/Limit Level exceedance of 1-hour TSP results was recorded in the reporting quarter. However, one (1) Limit Level exceedance of 24-hour TSP results was recorded in the reporting quarter.

Breaches of Action and Limit Levels for Noise

No Action/Limit Level exceedance of impact noise monitoring was recorded in the reporting quarter.

Breaches of Action and Limit Levels for Water Quality

Nine (9) Action Level exceedances and (1) Limit Level Exceedance were recorded at measured suspended solids (SS) values (in mg/L) and one (1) Action Level exceedance was recorded at measured turbidity (in NTU) in the reporting quarter. Investigation results show that the exceedances were not due to the Project works.

Triggering of Event and Action Plan for Impact Dolphin Monitoring

No triggering of Event and Action Plan for impact dolphin monitoring was noted in the reporting quarter.

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, except inability of setting up and carrying out impact air quality monitoring at AMS6 (Dragonair/CNAC (Group) Building) were noted. Liaison with relevant parties for permission on access to the premise for setting up and carrying out impact air quality monitoring works at AMS6 was continued until 19 November 2012. Reference is made to ET's proposal of the omission of air monitoring station (AMS 6) dated on 1st November 2012 and EPD's letter dated on 19th November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 will be effective since 19th November 2012.

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

1 (one) environmental complaint was received in the reporting quarter.

No notification of summons and successful 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) and October 2012 (EP-353/2009/E). 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).

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 16 October 2012 (EP-353/2009/E) and 8 December 2011 (EP-354/2009/A) (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 third 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 September 2012 and 30 November 2012.

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	Michael Lo	2528 3031	2668 3970
IEC / **ENPO** (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3743 0788	3548 6988
	Environmental Project Office Leader	Y.H. Hui	3743 0788	3548 6988
Contractor (China Harbour Engineering Company Limited)	General Manager (S&E)	Daniel Leung	3157 1086	2578 0413
	Environmental Officer	C. M. Wong	3157 1086	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
- Maintenance of Silt curtain
- Silt curtain deployment and repairing
- Sand blanket trial
- Band drain installation trial
- Stone column installation
- Construction of cellular structure
- Backfill cellular structure

Land-based Works
- Site office erection and construction at Works Area WA2
- Hoarding erection at Work Areas Portion D and Works Area WA2
- Sign board erection at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3

- Geo-textile fabrication at Works Area WA2 and WA4
- Silt curtain fabrication at Works Area WA2;
- Stone column and cellular installation barges setup and their maintenance works at Works Area WA4

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. 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 before November 2012. Liaison with relevant parties for permission on access to the premise for setting up and carrying out impact air quality monitoring works at AMS6 was continued until 19 November 2012. Reference is made to ET's proposal of the omission of air monitoring station (AMS 6) dated on 1st November 2012 and EPD's letter dated on 19th November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 will be effective since 19th 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 (AMS3A) 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 (NMS3A) 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/E and EP-354/2009/A) (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, AMS3A, 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		
		Sep 12	Oct 12	Nov 12
1-hr TSP	AMS2	15	15	15
	AMS3A	15	15	15
	AMS7	15	15	15
24-hr TSP	AMS2	5	5	5
	AMS3A	5	5	5
	AMS7	5	5	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		
			Sep 12	Oct 12	Nov 12
1-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3A	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
	AMS3A	Action	0	0	0
		Limit	0	0	1
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	1

3.1.5 All impact 1-hour TSP monitoring results at all monitoring locations were below the Action and Limit Levels in the reporting quarter.

3.1.6 However, one (1) 24-hour TSP result exceeded the Limit Level at monitoring station AMS3A in the reporting quarter.

3.1.6.1 According to information provided by the Contractor and on-site observations, installing sand bags, stitching geotextile and transloading finished product to vessels were the major land-based construction activity being undertaken at Works Area WA2 during the monitoring period.

3.1.6.2 Construction activities, including installing sand bags, stitching geotextile and transloading finished product to vessels were carried out on 13 &14 Nov 2012 and 19 &20 Nov 12 but no exceedance was recorded on 13 &14 Nov 12.

3.1.6.3 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.

3.1.6.4 Construction activities, like sheet piling and percussive piling, were carrying out by nearby private development project during the course of monitoring, which are close to the monitoring station AMS3A. Meanwhile, exposed soil surfaces were observed at those construction sites nearby

3.1.6.5 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 19 Nov 2012 and 20 Nov 2012, south eastern wind was prevailing during the monitoring period. Construction works carried out at nearby construction sites may contribute to the measured dust levels at the monitoring station AMS3A.

3.1.6.6 The 1-hr TSP values recorded at AMS3A on 20 Nov 2012, which are within the monitoring period of the 24-hr TSP, were 91.7 μg/m3, 88.3 μg/m3 and 87.1 μg/m3 respectively. All measured values are well below the Action and Limit Levels.

3.1.6.7 The measured 24-hr TSP values recorded at AMS2 and AMS7 (which are closer to the marine-based works areas) on the same monitoring date were 80.4g/m3 and 88.4g/m3 respectively, which are below the Action and Limit Levels.

3.1.6.8 The following dust mitigation measures have been implemented by the Contractor:

- Main haul road in Works Area WA2 were concrete paved.
- Vehicle washing facility was provided at vehicle exit points, and vehicle was washed to remove any dusty materials from its body and wheels before leaving.
- Measures for preventing fugitive dust emission are provided, e.g. watering and tarpaulin covers.

3.1.6.9 The dust exceedance was therefore considered not to be due to the Project works. Nevertheless, the Contractor was recommended to continue implementing existing dust mitigation measures.

3.1.7 The graphical plots of the impact air quality monitoring results are provided in Appendix E. No specific trend of the monitoring results or existence of persistent pollution source was noted.

3.2 Noise Monitoring

3.2.1 Impact noise monitoring was conducted at the 2 monitoring stations (NMS2 and NMS3A) 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 Major noise sources during the noise monitoring included construction activities of the Project and nearby traffic noise.

3.2.4 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		
		Sep 12	Oct 12	Nov12
	NMS2	13	13	13
	NMS3A	13	13	13

Table 3.4 Summary of Number of Monitoring Exceedances for Impact Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Sep 12	Oct 12	Nov12
	NMS2	Action	0	0	0
		Limit	0	0	0
	NMS3A	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	***0***

3.2.5 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.

3.3 Water Quality Monitoring

3.3.1 Impact water quality monitoring was conducted 3 times per week during mid-ebb and mid-flood tides at 21 water monitoring stations (9 Impact Stations, 7 Sensitive Receiver Stations and 5 Control/Far Field Stations).

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

3.3.3 Total of Nine (9) Action Level exceedances and (1) Limit Level Exceedance were recorded at measured suspended solids (SS) values (in mg/L) and one (1) Action Level exceedance was recorded at measured turbidity (in NTU) in the reporting quarter. Investigation results show that the exceedances were not due to the Project works. Number of exceedances recorded in the reporting month at each impact station is summarized in Table 3.5

Table 3.5 Summary of Water Quality Exceedances in Sep-Nov 2012

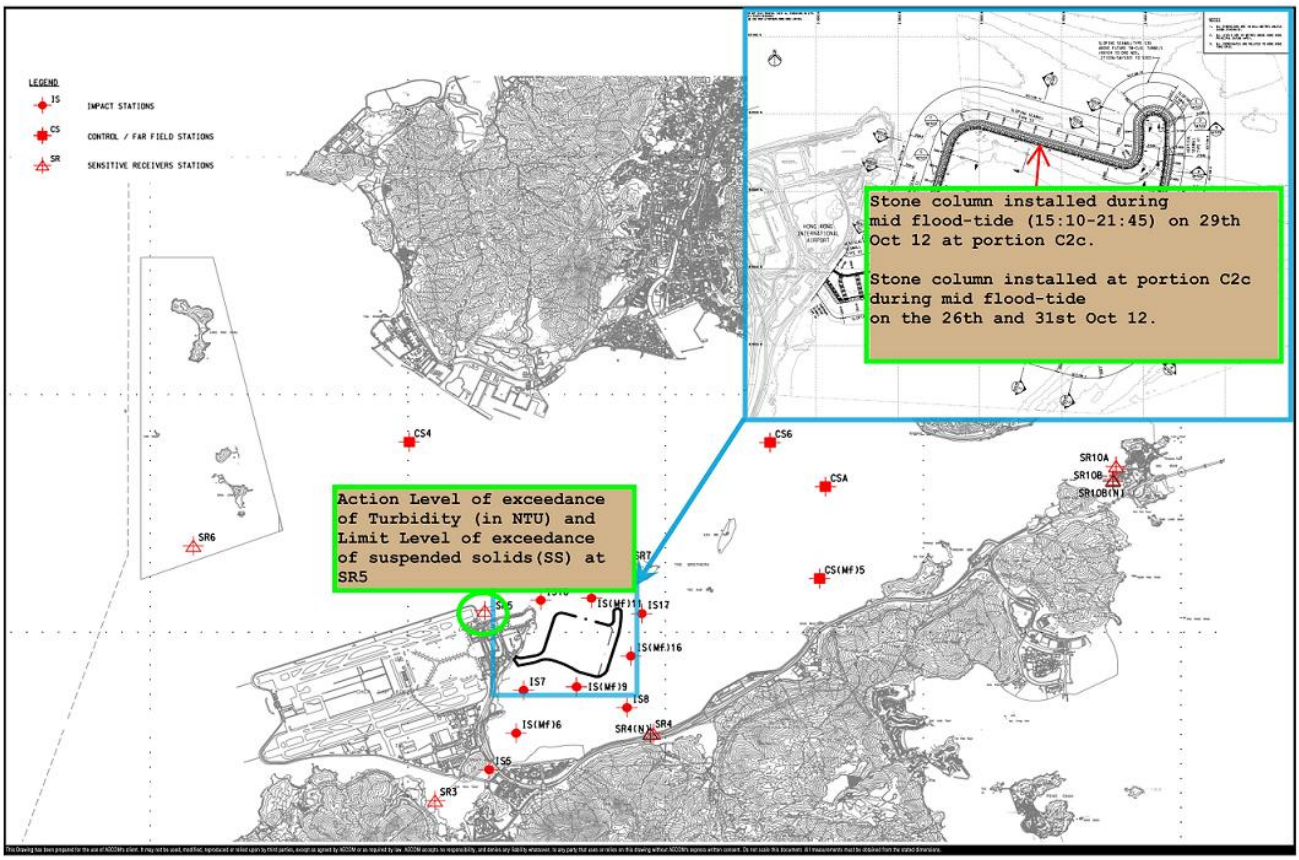
Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	1 **(28Nov 12)**	1 **(26 Nov 12)**	1 **(28 Nov 12)**	1 **(26 Nov 12)**
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	2 **(26, 28 Nov 12)**	1 **(16 Nov 12)**	2 **(26, 28 Nov 12)**	1 **(16 Nov 12)**
	Limit	0	0	0	0	0	0	0	0	0	0
IS8	Action	0	0	0	0	0	0	0	1 **(16 Nov 12)**	0	1 **(16 Nov 12)**
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	1 **(26 Nov 12)**		0	1 **(26 Nov 12)**
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	1 **(30 Nov 12)**	0	1 **(30 Nov 12)**	
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	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	1 **(16 Nov 12)**	0	1 **(16 Nov 12)**
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	1 **(29 Oct 12)**	0	0	0	1 **(29 Oct 12)**
	Limit	0	0	0	0	0	0	0	1 **(29 Oct 12)**	0	1 **(29 Oct 12)**
SR6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	0	0	0	0	0	0	0	0	0
	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 (N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
Total	**Action**	0	0	0	0	0	0	0	0	10 **(29 Oct,16, 26, 28 and 30 Nov 12)**	
	Limit	0	0	0	0	0	0	0	0	1 **(29 Oct 12)**	

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

3.3.4 One (1) Action Level exceedance was recorded for turbidity (in NTU) and one (1) Limit Level exceedance was recorded for suspended solids (mg/L) at monitoring station SR5 in October.

3.3.4.1 One (1) turbidity Action Level exceedance and one (1) suspended solids Limit Level exceedance were recorded on 29th Oct 2012 during mid-flood tide at Sensitive Receiver Station SR5. For Action Level exceedance at measured turbidity (NTU), 41 (NTU) was recorded. For Limit Level exceedance at measured Suspended Solids (mg/L), 38.4 mg/L was recorded.

3.3.4.2 For the exceedances recorded at SR5, it was found that stone column installation was carried out during mid-flood tide at Portion C2c by FTB 19 and FTB23. Location plan showing the locations of the mentioned works is shown below:



3.3.4.3 Turbidity and suspended solids values recorded at Impacts Stations closer to the works area (e.g. IS10 and IS(Mf)11) are all below the Action and Limit Level during the mid-flood tide on the same day.

3.3.4.4 Same work at same portion was carried out on the day(s) on 26 October and 31 October while no exceedance was recorded on these two days at the same tide.

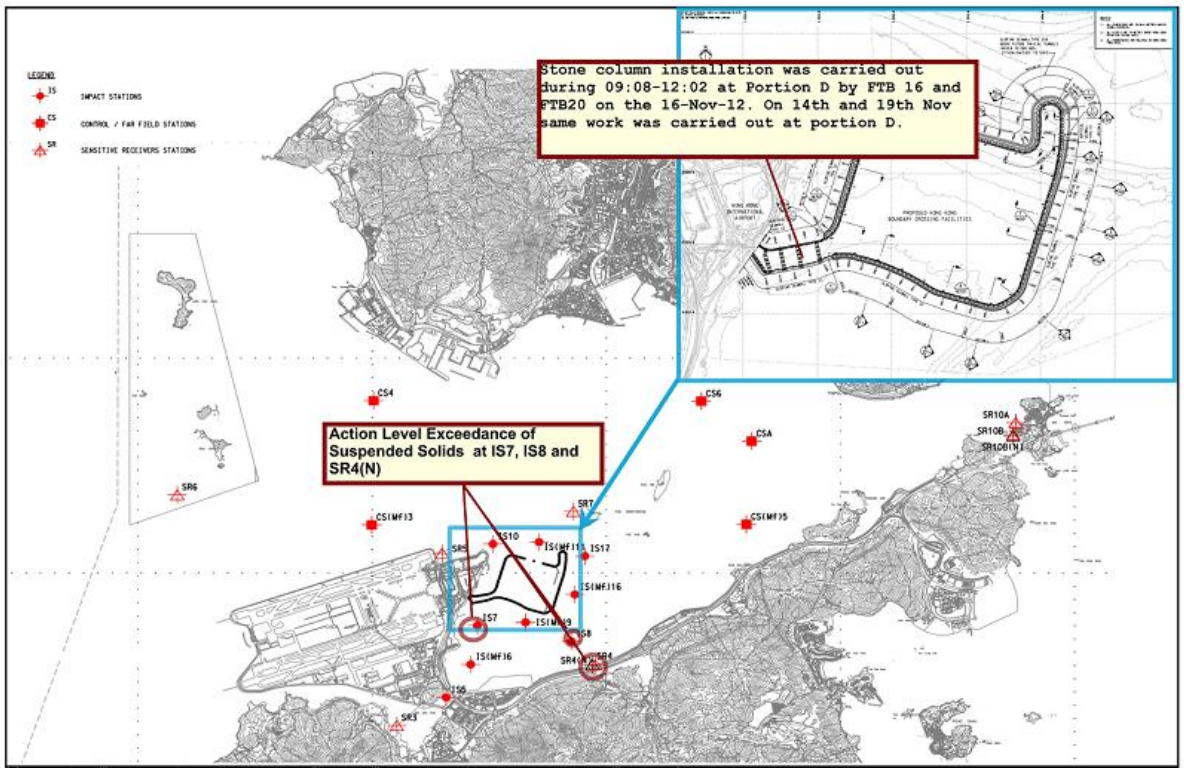
3.3.4.5 Strong wind and rough sea condition was experienced during the monitoring period, which is likely to affect the ambient water quality in such shallow water condition.

3.3.4.6 The exceedance was considered as non-project related.

3.3.5 Total of Nine (9) Acton Level exceedances at measured Suspended Solids (mg/L) were recorded during November

3.3.5.1 Three (3) suspended solids Action Level exceedances were recorded, Three (3) where recorded on 16th Nov 2012 during mid-flood tide at Impact Station IS7, IS8 and SR4 (N). For Action Level exceedances at measured Suspended Solids (mg/L), 25.7 mg/L, 26.0 mg/L and 27.1 were recorded at Impact Station IS7, IS8 and SR4 (N) respectively.

3.3.5.2 For the exceedances recorded at IS7, IS8 and SR4 (N), it was found that stone column installation was carried out during 09:08-12:02 at Portion D by FTB 16 and FTB20 on the 16-Nov-12. Location plan showing the locations of the mentioned works is shown below:



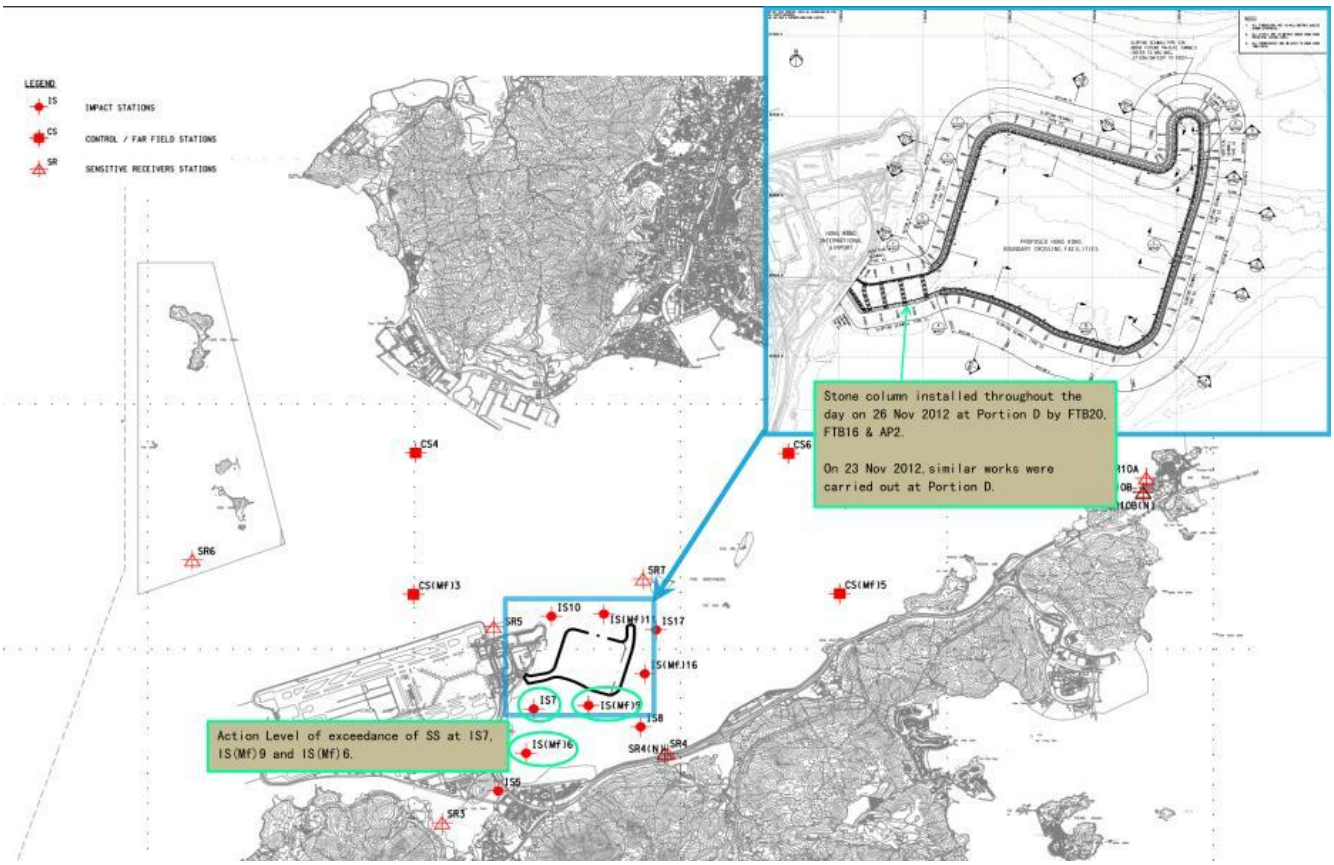
3.3.5.3 IS(Mf)9 is located between monitoring site IS7 and IS8 and has a shorter distance to the work area than monitoring site SR4(N) and IS8. Suspended Solids (SS) values (in mg/L) recorded at IS(Mf)9 is below the Action and Limit Level during the flood tide on the same day.

3.3.5.4 Same work at same portion was carried out on the day(s) on 14th November and 19th November while no exceedance was recorded on these two days at the same tide.

3.3.5.5 Strong wind and rough sea condition was experienced during the monitoring period, which is likely to affect the ambient water quality in such shallow water condition.

3.3.5.6 The exceedance was considered as non-Project related.

3.3.6 Three (3) where recorded on 26th Nov 2012 during mid-ebb tide at Impact Station IS(Mf)9 and IS7 and during mid-flood tide at Impact Station IS(Mf)6. For Action Level exceedances at measured Suspended Solids (mg/L), 23.8 mg/L, 24.2 mg/L and 28.1mg/L were recorded at Impact Station IS(Mf)9, IS7 and IS(Mf)6 respectively.



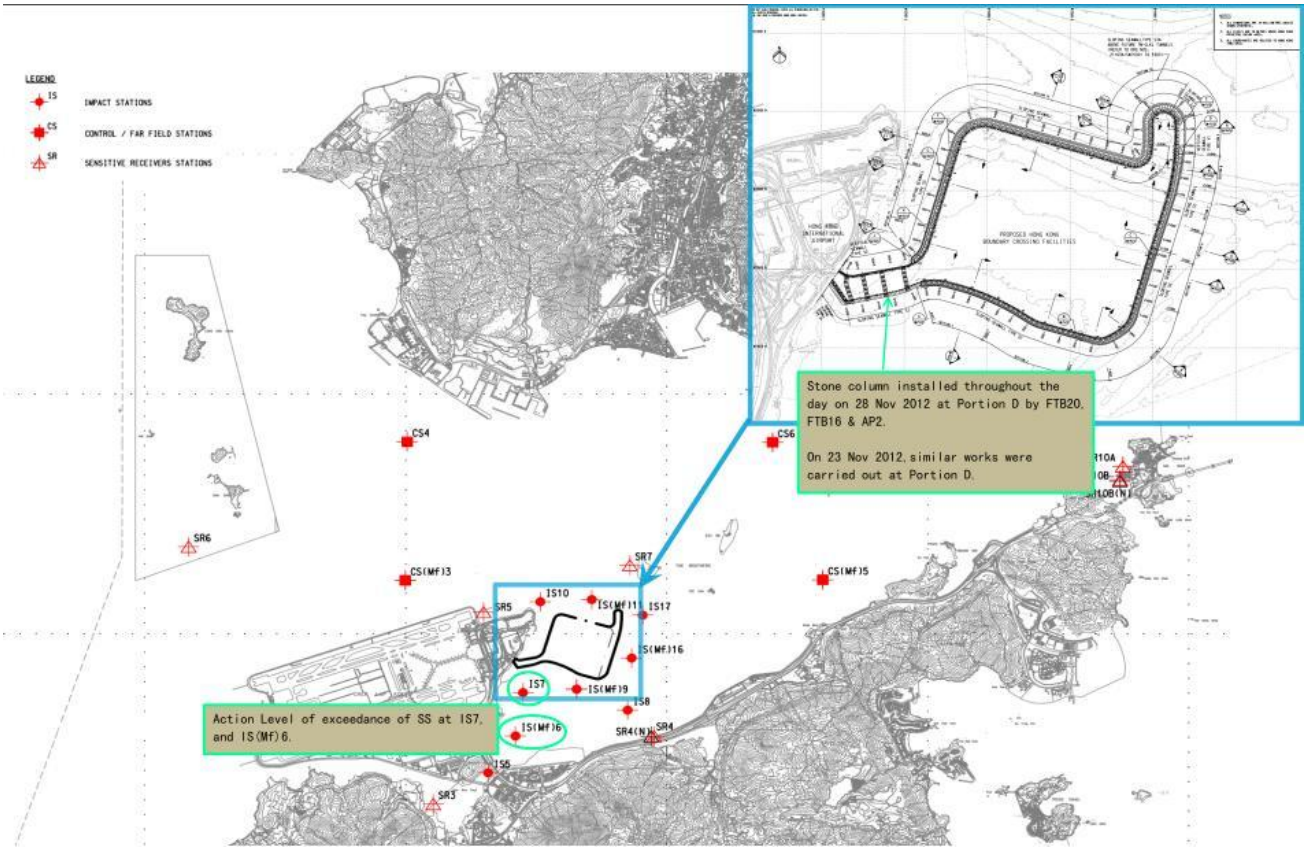
3.3.6.1 For Action Level Exceedances of SS at IS(Mf)9 and IS7 at Mid-Ebb tide, IS(Mf)6 at Mid-Flood tide on 26 November 2012, Stone column installation was carried out throughout the day at Portion D by FTB 16, FTB20 and AP2 on 26 Nov 2012.

3.3.6.2 Same work at same portion was carried out on the day on 23 November 2012 while no exceedance was recorded on 23 November 2012 at the same tide.

3.3.6.3 Rough sea condition and strong wind was noted during both Mid-Ebb tide and Mid-Flood tide. Shallow water condition at IS(Mf)9, IS7 and IS(Mf)6, water quality was likely to be affected up by rough sea condition and strong wind.

3.3.6.4 The exceedances was considered as Non-Project Related.

3.3.7 Two (2) where recorded on 28th Nov 2012 during mid-ebb tide at Impact Station IS(Mf)6 and IS7. For Action Level exceedances at measured Suspended Solids (mg/L), 31mg/L and 24.1mg/L were recorded at Impact Station IS(Mf)6 and IS7 respectively.



3.3.7.1 For Action Level Exceedances of SS at IS(Mf)6 and IS7 at Mid-Ebb tide on 28 November 2012, Stone column installation was carried out throughout the day at Portion D by FTB 16, FTB20 and AP2 on 28 Nov 2012.

3.3.7.2 Same work at same portion was carried out on the day on 23 November 2012 while no exceedance was recorded on 23rd November 2012 at the same tide.

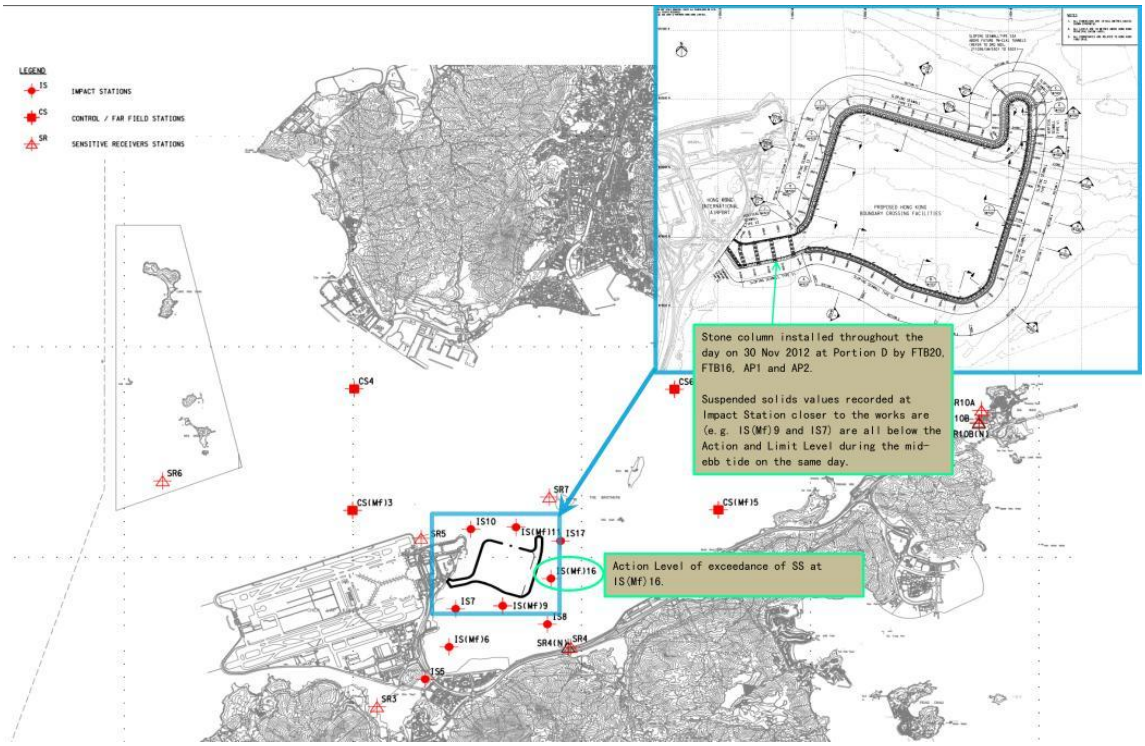
3.3.7.3 Suspended solids values recorded at Impact Station IS(Mf)9 which is closer to the works area than IS(Mf)6 is below the Action and Limit Level during the mid-ebb tide on the same day.

3.3.7.4 Bottom sediment might be stirred up by rough sea condition and strong wind at shallow water condition at Mid-Ebb tide at IS(Mf)6 and IS7 which in turn might contribute to the elevation in suspended solid.

3.3.7.5 In view of there is no damage can be observed from the silt curtain which deployed in the works area at Portion D.

3.3.7.6 The exceedances were considered as Non-Project Related.

3.3.8 One (1) where recorded on 30th Nov 2012 during mid-ebb tide at Impact Station IS(Mf)16. For Action Level exceedances at measured Suspended Solids (mg/L), 27.3mg/L was recorded at Impact Station IS(Mf)16 respectively.



3.3.8.1 For Action Level Exceedance of SS at IS(Mf)16 at Mid-Ebb tide on 30 November 2012 Stone column installation was carried out throughout the day at Portion D by FTB 16, FTB20, AP1 and AP2 on 30-Nov-12

3.3.8.2 Suspended solids values recorded at Impact Station closer to the works are (e.g. IS(Mf)9 and IS7) are all below the Action and Limit Level during the mid-ebb tide on the same day.

3.3.8.3 The monitoring site was far away from Partion D where work was carried out.

3.3.8.4 In view of there is no damage can be observed from the silt curtain which deployed in the works area at Portion D.

3.3.8.5 The exceedance was considered as Non-Project Related.

3.3.9 The graphical plots of the trends of the monitoring results are provided in Appendix G. No specific trend of the monitoring results or existence of persistent pollution source was noted.

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 Sep-Nov 2012

Number of Impact Surveys Completed^	6
Survey Distance Travelled under Favourable On- Effort Condition	659.8km
Number of Sightings	71 sightings (52 sightings are ”on effort” (which are all under favourable condition), 19 “sightings are opportunistic”)
Number of dolphin individual sighted	228 individuals (the best estimated group size)
Dolphin Encounter Rate	NEL: 6.3% NWL: 8.7%
Dolphin Group Size (for both NEL and NWL)	Average of 3.3±2.5(SD) Varied from 1-10 individuals
Most Often frequent dolphin sighting area	NWL: Lung Kwu Chau and Sha Chau Marine Park area and adjacent, eastern waters and northeast of the airport platform. NEL: Southern Brothers Islands and the coastal area from Sham Shui Kok to the Ma Wan Bridge.

Remarks:

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

3.4.5 No triggering of Event and Action Plan for impact dolphin monitoring was noted in the reporting quarter.

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

3.4.7 During a survey period encounter on 3 September 2012, a dead adult female was observed in Northwest Lantau (NWL) near Transect line no. 1. The deceased dolphin was retrieved approximately 13km from north perimeter of HKBCF reclamation works. The Agriculture Fisheries and Conservation Department (AFCD) Hotline and Ocean Park (OP) were called. AFCD dispatched a Marine Parks boat to collect the carcass. It was noted that major construction works carried out for a period prior to the observation made on 3 September 12 are stone column installation and cellular structure construction. It is similar to the works carried out since the project construction work began. (Please refer to Section 1.4.2 for types of works being conducted)

3.4.8 Furthermore, the HKBCF PAM system records underwater noise levels as well as dolphin vocal activity. Both stone column piling and vibration piling create very low underwater noise levels as most of the activity actually occurs within the sediment rather than in the open water column. There is minimal transmission of sound at the solid-liquid interface of the sea bed. Any noise from the HKBCF stone column and vibration piling construction activities appears to be site specific and is considered to be minimal.

3.4.9 Moreover, there had been no exceedance of any monitored marine water quality parameter at all monitoring stations around the worksite, for a period of time prior to this record. Considering the nature, scale and location of the works, it is reasonable to conclude that marine works at HKBCF did not contribute to this mortality incident

3.4.10 Also, the recommended mitigation measures, such as implementation of dolphin exclusion zone during deployment of perimeter silt curtain system, implementation of dolphin watching plan for enclosed areas after deployment of perimeter silt curtain system, controlling of vessel speed and travelling routes and provision of decoupling measures to compressors and other equipment on working vessels, which are in place to lessen direct impact from construction activities to individual dolphins, are currently being implemented consistently. (Please refer to Appendix C -EMIS for more mitigation measures).

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, 13 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 The Contractor was reminded to check the operating plants on barge regularly and carry out maintenance /repair (if necessary), to avoid any dark smoke emission. (Reminder)

Noise

3.5.4 No adverse observation was identified in the reporting Quarter.

Water Quality

3.5.5 Distortion of part of silt curtain system at site boundaries at Portion D, B, C2a and silt curtain system installed around the stone column installation area of FTB19 at Portion C2c were rectified. (Closure of item from previous reporting month)

3.5.6 Silty plume was noted around the stone column installation areas of FTB16 at Portion D and around the silt curtain system when the stone column installation was carried out by FTB23 when site inspection was conducted on FTB 19. The Contractor was advised to check the silt curtain systems installed regularly and review the arrangement of localized primary silt curtains to minimize any leakage from works. Also the Contractor was reminded to fix the primary silt curtain prior to stone column installation works. Such conditions were rectified within the reporting quarter and the contractor was reminded to keep checking the silt curtains systems regularly. (Closure of item in reporting quarter)

Chemical and Waste Management

3.5.7 Open holes was found in the bunding for storage oil drums and power pack at Barge San Hang Bo 208 and between barge surface and the bunding on barge Sang Hang Qi 7. The Contractor was reminded to seal the open holes to retain any oil leakage. Open holes found in the bunding for storage oil drums and power pack at Barge Sang Hang Bo 208 and barge Sang Hang Qi 7 were sealed to prevent any leakage of oil. Also, an opening at the bottom of a drip tray was observed on FTB 19. The Contractor was reminded to seal the opening at the bottom of the drip tray. The opening at the bottom of a drip tray was sealed in the reporting quarter. (Closure of item in the reporting quarter)

3.5.8 Oily water accumulated in drip trays were cleared on Barge FTB 20 and Barge Kiu Chi and disposed of as chemical waste in the reporting quarter. (Closure of item in the reporting quarter)

3.5.9 General refuses accumulated on Barge Kiu Chi were disposed of properly in the reporting quarter. (Closure of item in the reporting quarter)

3.5.10 Oil leakage was noted from a plant on FTB16 at Portion D. Oily mixture was accumulated inside the bunded area, at FTB19 at Portion C2a and accumulated inside the power pack on Barge San Hang Bo 305, too. The Contractor was recommend to repair the plant and clear the mixture and treat them as chemical wastes. Such conditions were rectified within the reporting quarter. (Closure of item in reporting quarter)

3.5.11 Oil stains were found on barge and near power pack at barge San Hang Qi 7, near two roll of wire on barge Sang Hang Qi 7, near oil drum on barge Sun Moon Kee, on barge near powerpack on barge Sang Hang Bo 210 and on Barge San Hang Bo 401. The contractor was reminded to clean the oil stain and the absorbents should be treated as chemical wastes. The Contractor was reminded to provide mitigation measure such as drip tray or tarpaulin sheet to retain any oil leakage. The Contractor provided mitigation measure such as tarpaulin sheet to retain any oil leakage and bunding was provided to retain leaked oil from the power pack on Barge San Hang Qi 7. (Closure of item in the reporting quarter)

3.5.12 Empty oil drums were found improperly stored on barge Sun Moon Kee. The contractor was reminded to provide mitigation measures such as providing drip trays to waste oil drums or to place the waste oil drum to a proper storage area for temporary storage. Empty oil drums on barge Sun Moon Kee were removed. Also, oil drums were stored inside the drip trays to retain any oil leakage at Works Area WA4. (Closure of item in the reporting quarter)

3.5.13 Oil drums were found improperly stored on barge San Hang Qi 7, barge Sun Moon Kee, FTB19 at Portion C2a and Sang Hang Bo 205. Drip trays should be provided to oil drums stored within works areas to retain any leaked oil. Oil drums were stored inside the bunding on barge within the reporting quarter. (Closure of item in the reporting quarter) A drum of waste oil was found improperly stored on barge Sun Moon Kee. The Contractor was reminded to place the waste oil drum to designated chemical waste storage area for temporarily storage. The chemical waste container should also be labelled. A proper lid should be provided to the opened drum. Such condition was rectified within the reporting quarter. (Closure of item in the reporting quarter)

3.5.14 Drip tray was provided to the power pack on barge San Hang Bo 402 at Portion B. Measure was provided to vibratory clamp on barge San Hang Bo 208 and oil stains on barge deck were cleared. The Contractor was reminded that measures like drip trays and tarpaulin sheet coverage should be provided to plants to retain any leakage. Oil stains on barge deck should be cleared and absorbents should be treated as chemical wastes. (Closure of item in reporting quarter)

3.5.15 Power pack without drip trap was observed. The contractor was reminded to provide proper measure such as drip tray to power pack to retain leaked oil. Power pack was found improperly stored on Barge San Hang Bo 401. The Contractor was reminded that proper measures like drip trays/tarpaulin sheets should be provided to retain any leaked oil from power pack on the barge. Power pack improperly stored on Barge San Hang Bo 401 was removed within the reporting quarter. (Closure of item in the reporting quarter).

3.5.16 Drip tray was provided to the power pack on barge San Hang Bo 402 at Portion B. Measure was provided to vibratory clamp on barge San Hang Bo 208 and oil stains on barge deck were cleared. The Contractor was reminded that measures like drip trays and tarpaulin sheet coverage should be provided to plants to retain any leakage. Oil stains on barge deck should be cleared and absorbents should be treated as chemical wastes. (Closure of item in reporting quarter)

3.5.17 The contractor was reminded to disposal the oil absorbent materials of as chemical wastes and provide a proper chemical waste storage area on Barge San Hang Bo 208. (reminder)

3.5.18 General refuse collection bin on FTB16 at Portion D was found placed inside the bunded area for oil drums storage. The Contractor was recommended to relocate the general refuse collection area. Such condition was rectified within the reporting quarter. (Closure of item in reporting quarter)

3.5.19 The containers placed for containing the dripping water from air-conditors were found full of water and debris at Barge SHA HANG QI 6. Immediate actions of clearing up the containers were taken by the Contractor. The Contractor was reminded to keep the barge clean and tidy. (Closure of item in reporting quarter)

Landscape and Visual Impact

3.5.20 No adverse observation was identified in the reporting quarter.

Others

3.5.21 No adverse observation was identified in the reporting quarter.

3.5.22 The Contractor has rectified most of the observations as identified during environmental site inspection in the reporting quarter. 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, 14,845 m^3 of imported fill, 48,399.01m^3 of public fill and 42,535.9m^3 of rock fill were imported for the Project use in the reporting quarter. 200.0kg of chemical waste (solid) and 3,418.0L of chemical waste (liquid) were generated and disposed of in the reporting quarter. 21.71 tonnes of general refuse were generated and disposed of in the reporting quarter. 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 Practise 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, as included in the EM&A programme, were implemented properly in the reporting quarter, except inability of setting up and carrying out impact air quality monitoring at AMS6 (Dragonair/CNAC (Group) Building) were noted. Liaison with relevant parties for permission on access to the premise for setting up and carrying out impact air quality monitoring works at AMS6 was continued until 19 November 2012. Reference is made to ET's proposal of the omission of air monitoring station (AMS 6) dated on 1st November 2012 and EPD's letter dated on 19th November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 will be effective since 19th November 2012. 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 Regular marine travel route for marine vessels were implemented properly in accordance to the submitted plan 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 checking were conducted by the experienced MMOs within the works area to ensure no dolphin was trapped by the enclosed silt curtain systems. Any dolphin spotted within the enclosed silt curtain systems was reported and recorded. Relevant procedures were followed and measures were well implemented. Silt curtain systems were also inspected timely in accordance to the submitted plan. All inspection records were kept properly.

5.1.5 Acoustic decoupling measures on noisy plants on construction vessels were checked regularly and these measures were well implemented.

5.1.6 One (2) Non-Compliance dated on 31 Oct 2012 and 6 Nov 2012 was noted during the reporting quarter.

5.1.7 For the Non-Compliance dated on 31 Oct 2012, as informed by the Contractor on 30 November 2012, a noise complaint was received by EPD on the 18 Oct 2012 and on one of the two complaint follow up inspection conducted by EPD on 19 and 31 October 2012, operation of a powered mechanical equipment after 19:00 without valid CNP was observed on 31 Oct 12 at WA4. One worker was carrying out emergency maintenance for machinery with generator after 19:00, while no construction noise permit was in force, which is suspected that the Noise Control Ordinance (Cap.400) was violated. A "Pink Form" (inspection record) was subsequently issued by EPD on the 14 November 2012 regarding the suspected violation of Noise Control Ordinance (Cap.400).

5.1.7.1 The Contractor was recommended to implement the following noise mitigation measures in case any construction activities involving the use of Powered Mechanical Equipment (PME) is conducted in the concerned area:

a) Work involves Powered Mechanical Equipment (PME) should be stopped before 7 pm
b) Review the need to increase the frequency of Construction Noise and Suppression training, provide extra training if deemed necessary.
c) Install notice sign on site to notice workers that Powered Mechanical Equipment (PME) and Prescribed Construction Work (PCW) (e.g. 1. Erection or dismantling of formwork or scaffolding. 2. Loading, unloading or handling of rubble, wooden boards, steel bars, wood or scaffolding material and 3. Hammering) are not allowed from 7pm to 7am on the next day or anytime on public holidays, including Sundays.

d) The noise mitigation measures should be maintained and the effectiveness of noise mitigation measures deployed within works area should be enforced and reviewed onsite regularly in order to provide sufficient noise screening effect properly.

5.1.7.2 A follow-up site inspection was conducted on 3 January 2013 by ET and with representative from the Contractor. During the inspection, follow up actions taken by the Contractor to improve the situation was observed. No Powered Mechanical Equipment (PME) was in operation and it was observed that notice signs were installed on site by the Contractor to notice workers that work involves Powered Mechanical Equipment (PME) is prohibited from 19:00 to 07:00 on all days and whole day on public holiday.

5.1.7.3 Prior to any confirmation of any possible summon and prosecution. ET will continue to monitor the mitigation actions carried out by the Contractor and provide appropriate assistance and advice whenever necessary.

5.1.8 For the Non-Compliance dated 6 Nov 2012 there was an incident of trial filling of sand blanket by conveyor without full enclosure observed and reported. The condition was rectified and the wind board was installed on 8 Nov 2012.

6 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

6.1 Summary of Exceedances of the Environmental Quality Performance Limit

6.1.1 No Action/Limit Level exceedance of 1-hour TSP results was recorded in the reporting quarter. However, one (1) Limit Level exceedance of 24-hour TSP results was recorded in the reporting quarter.

6.1.2 For impact noise monitoring, no Action and Limit Level exceedance was recorded at all monitoring stations in the reporting period.

6.1.3 For impact water monitoring, Nine (9) Action Level exceedances and (1) Limit Level Exceedance were recorded at measured suspended solids (SS) values (in mg/L) and one (1) Action Level exceedance was recorded at measured turbidity (in NTU) in the reporting quarter. Investigation results show that the exceedances were not due to the Project works.

6.1.4 Cumulative statistics on exceedances is provided in Appendix J.

7 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

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

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

7.1.2 As informed by the Contractor in the reporting quarter. One complaint was received by EPD on 18 October 2012.

7.1.3 1 (One) environmental complaint was received in the reporting quarter.

7.1.2.1 As informed by the Contractor on the 28 Dec 2012, a noise related complaint was received by EPD on 18 Oct 2012

7.1.2.2 As provided by the Contractor, the site daily of Works Area WA4 for 13 - 18 October 2012 was reviewed. In accordance with the site daily of Works Area WA4 for 13 - 18 October 2012, no construction activities was being carried out during restricted hour (7 pm to 7am next day on weekdays)

7.1.2.3 A follow-up site inspection was conducted between 14:00 and 14:30 on 3 January 2013 by the ET and with representative from the Contractor. During the inspection, follow up actions were taken by the Contractor to improve the situation was observed. No generator was in operation and also it was observed that notice signs were installed on site by the Contractor to notice workers that work involves Powered Mechanical Equipment (PME) is prohibited after 7 pm to 7am next day on weekdays and whole day on public holiday.

7.1.2.4 As informed by the Contractor, a foreman was assigned to the working area as corrective action to ensure generator was switched off and workers have left before 7pm, who would also report to the superintendent.

7.1.2.5 The Contractor provided preventive actions such as reinforced the number of construction noise and suppression training. After the complaint, such training were given on 12, 15,21, 23, 26, 28 and 30 Nov and 3, 7, 11, 14, 15, 17, 20 and 24 Dec among Works Area WA2 & WA4, on Vessel FTB-16, FTB-18, FTB-19 & FTB -20, site TKO, on vessel SHB 601 & SHB208 and Site office.

7.1.2.6 The Contractor was recommended to implement the following noise mitigation measures in case any construction activities involving the use of Powered Mechanical Equipment (PME) is conducted in the concerned area:

- Any PME should not be operated from 7pm to 7am on the next day or anytime on public holidays, including Sundays.
- Review the need to increase the frequency of Construction Noise and Suppression training, provide extra training if deemed necessary.
- Install notice sign on site to notice workers that PME and Prescribed Construction Work (PCW) are not allowed from 7pm to 7am on the next day or anytime on public holidays, including Sundays.
- The noise mitigation measures should be maintained and the effectiveness of noise mitigation measures deployed within works area should be enforced and reviewed onsite regularly in order to provide sufficient noise screening effect properly.
- Contractor must obtain a valid CNP for operation of PME from 7pm – 7am on weekdays and whole day on public holiday.

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

7.1.5 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix J.

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.

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 No Action/Limit Level exceedance of 1-hour TSP results was recorded in the reporting quarter. However, one (1) Limit Level exceedance of 24-hour TSP results was recorded in the reporting quarter.

8.3.3 For impact noise monitoring, no Action and Limit Level exceedance was recorded at all monitoring stations in the reporting period.

8.3.4 For impact water monitoring, Nine (9) Action Level exceedances and (1) Limit Level Exceedance were recorded at measured suspended solids (SS) values (in mg/L) and one (1) Action Level exceedance was recorded at measured turbidity (in NTU) in the reporting quarter. Investigation results show that the exceedances were not due to the Project works.

8.3.5 No triggering of Event and Action Plan for impact dolphin monitoring was noted in the reporting quarter.

8.3.6 Environmental site inspection was carried out twelve times in the reporting quarter. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

8.3.7 1 (one) environmental complaint was received in the reporting quarter.

8.3.8 No notification of summons and successful prosecution was received in the reporting quarter.

8.3.9 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, except inability of setting up and carrying out impact air quality monitoring at AMS6 (Dragonair/CNAC (Group) Building) were noted. Liaison with relevant parties for permission on access to the premise for setting up and carrying out impact air quality monitoring works at AMS6 was continued until 19 November 2012. Reference is made to ET's proposal of the omission of air monitoring station (AMS 6) dated on 1st November 2012 and EPD's letter dated on 19th November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 will be effective since 19th November 2012.

8.3.10 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.

8.3.11 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.