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 2013- November 2013

[05/2014]

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

Version:	Rev. 0	Date: 12 May 2014

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_1913L.14 12 May 2014

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 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 2013 to November 2013

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring & Audit Report for September 2013 to November 2013 (letter ref. 60249820/C/RMKY14051201 dated 12 May 2014) copied to us by E-mail on 12 May 2014.

Please be informed that we have no adverse comment on the captioned report. The ET Leader and the relevant specialist(s) of the ET are reminded that our verification to your report does not release any of their obligation in the EM&A Manual under the applicable Environmental Permit(s) for this project, in particular on dolphin monitoring and checking on any change in density and distribution pattern of Chinese White Dolphin and recommending appropriate actions and mitigation measures.

Further to the reminder given since our verification of the previous quarterly report for June to August 2013, ET is urged to step up their progress to complete the appropriate statistical tests as required under the EM&A Manual and report the findings without further delay.

The ET is also reminded that it is responsibility of the ET to ensure all data are true, valid and correct on certifying the report for submission.

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

ENVIRON Hong Kong Limited 英環香港有限公司
Room 2403 Jubilee Centre, 18 Fenwick Street, Wan Chai, Hong Kong. Tel: 852 3465 2888 Fax: 852 3465 2899
www.environcorp.com

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)

T:\Projects\HYDHZMBEEM00\02_Proj_Mgt\02_Corr\HYDHZMBEEM00_0_1913L.14.doc

ENVIRON Hong Kong Limited 英環香港有限公司
Room 2403 Jubilee Centre, 18 Fenwick Street, Wan Chai, Hong Kong. Tel: 852 3465 2888 Fax: 852 3465 2899
www.environcorp.com

TABLE OF CONTENTS

List of Tables

Figures

List of Appendices

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 24 April 2013 (EP-353/2009/F) 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 September 2013 and 30 November 2013. 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
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Laying stone blanket
- Band drain installation
- Backfill cellular structure
- Instrumentation works
- Rubble mound seawall construction
- Construction of temporary seawall
- Ground investigation

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- 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	12 sessions
Impact water quality monitoring	38 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 results were below the Action and Limit Level in the reporting quarter. Five (5) 24-hour TSP results recorded at AMS3A exceeded the Action Level and one (1) 24-hour TSP results recorded at AMS3A exceeded the Limit Level in the reporting quarter. Investigation results show that the exceedances were not related to Project.

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

Twenty eight (28) Action Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter. (2) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter. Investigation results show that the exceedances were not related to Project.

Breaches of Action and Limit Levels for Impact Dolphin Monitoring

Two (2) Action Level exceedances of dolphin monitoring were recorded in the reporting quarter. The investigation results showed that although no unacceptable changes in environmental parameters of this project have been measured, at this time it is not possible to make a conclusive assessment of this Project's specific impact on dolphins.

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

One (1) complaint was logged by the Contractor regarding the leakage from work barges causing water pollution near Tuen Mun Richland Garden received on 26 Sept 13. With refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

As informed by the Contractor on 5 Nov 13, one (1) noise complaint received on 14 Sept 13 was referred to the Contractor of HKBCF on 1 Nov 13. After investigation, the noise complaint was considered as non-project related.

One (1) complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the

project vessels of HY/2010/02 had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern. After investigation, the complaint is considered not likely to be related to the construction works.

One (1) follow up enquiry of the same issue mentioned in a complaint reported in the EM&A report (Sept 13) was logged by the Contractor on 9 Oct 2013. The enquirer expressed concern of the leakage from work barges causing water pollution at sea near Tuen Mun Richland Garden and the impact of fishery activities. Although with refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

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

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 seventh 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 2013 and 30 November 2013.

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
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Laying stone blanket
- Band drain installation
- Backfill cellular structure
- Instrumentation works
- Rubble mound seawall construction
- Construction of temporary seawall

- Ground investigation

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- 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 (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/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, 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		
		September 13	October 13	November 13
1-hr TSP	AMS2	16	18	16
	AMS3A	16	18	16
	AMS7	16	18	16
24-hr TSP	AMS2	5	6	5
	AMS3A	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		
			September 13	October 13	November 13
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	**1**	**2**	**2**
		Limit	0	0	**1**
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	***1***	***2***	***3***

3.1.5 All 1-Hour TSP results were below the Action and Limit Level in the reporting quarter. Five (5) 24-hour TSP results recorded at AMS3A exceeded the Action Level and one (1) 24-hour TSP results recorded at AMS3A exceeded the Limit Level in the reporting quarter. Investigation results show that the exceedances were not related to Project.

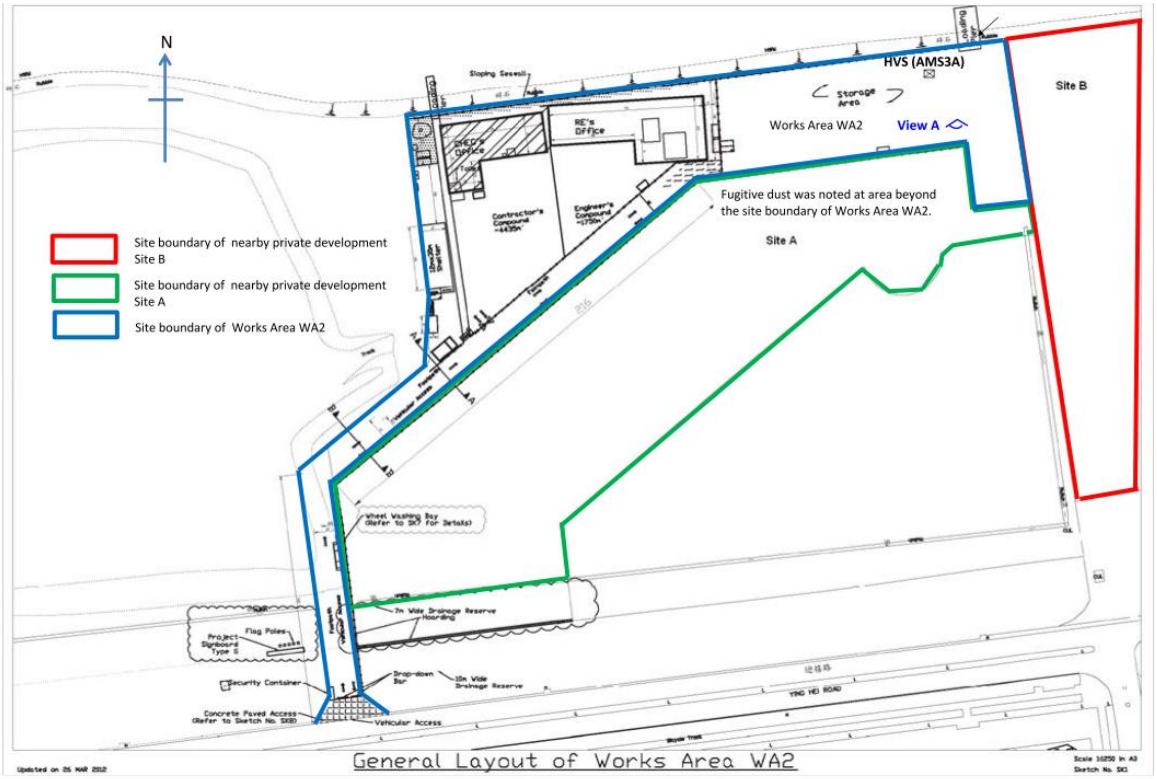
3.1.6 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 173μg/L was recorded on 19 Sept13 (24-hr TSP).

3.1.6.1 According to information provided by the Contractor, land-based construction activity such as installing and transloading of sand bags, deliver & transloading band drain material to site container and stitching geotextile were being undertaken at Works Area WA2 during the monitoring period.

3.1.6.2 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.

3.1.6.3 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 18 and 19 September 13, East South East winds was prevailing during the monitoring period.

3.1.6.4 Photo record shows that fugitive dust was emitted from the construction sites of nearby private development project located close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. With reference to the prevailing East South East wind direction, construction works carried out at construction sites of nearby private development project may contribute to the measured dust levels at the monitoring station AMS3A. (Please also see photo and layout map below for reference of site conditions.)



Conditions of the construction sites near Works Area WA2:

View of Works Area WA2 : the hard paved ground next to monitoring station AMS3A (View A on layout map)

3.1.6.5 Construction works carried out at construction sites of nearby private development project may contribute to the measured dust levels at the monitoring station AMS3A. The 1-hr TSP values recorded at AMS3A on 19 Sept 13, which are within the monitoring period of the 24-hr TSP, were 78 $\mu g/m^3$, 77 $\mu g/m^3$ and 77$\mu g/m^3$ respectively. All measured values are well below the Action and Limit Levels.

3.1.6.6 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 79 $\mu g/m^3$ and 70 $\mu g/m^3$ respectively, which are below the Action and Limit Levels.

3.1.6.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. tarpaulin covers.

3.1.6.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.6.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

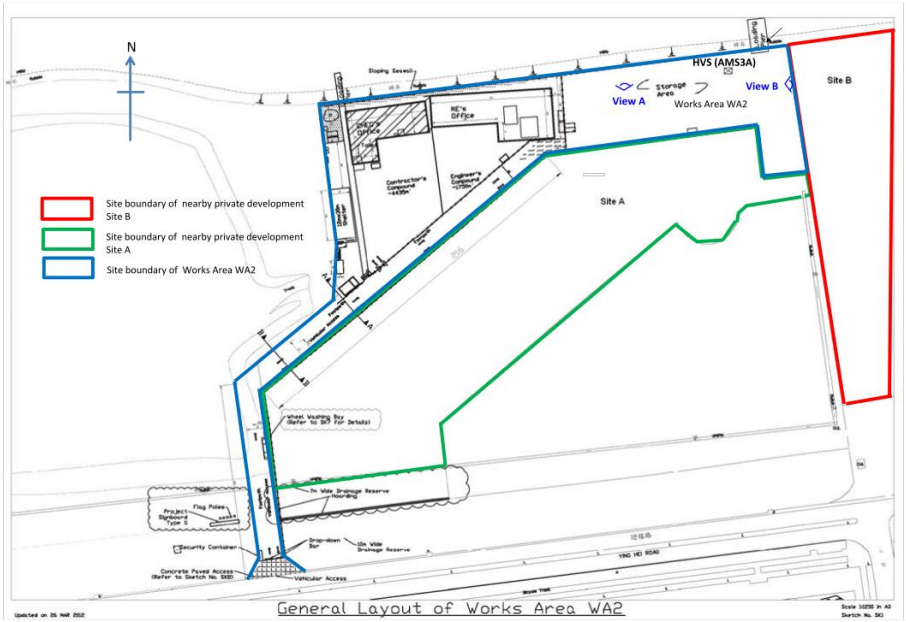
3.1.7 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 198μg/m^3 was recorded on 15 Oct 13 (24-hr TSP).

3.1.9.1 According to information provided by the Contractor, land-based construction activity such as using canvas to cover sand material, sampling geotextile material and stitching geotextile were being undertaken at Works Area WA2 during the monitoring period.

3.1.9.2 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.

3.1.9.3 Photo records shows that vehicle would travel on exposed soil surfaces at those construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions.)

3.1.9.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 15 and 16 Oct 13 (as attached) East South East winds was prevailing during the monitoring period. Traffics at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.



General Layout of Works Area WA2

Conditions of the construction sites near Works Area WA2:

View A: (Canvas was used to cover sand material stored at WA2):

View B: (Traffic on dusty surface observed at nearby construction site which do not belongs to this Contract)

3.1.9.5 The 1-hr TSP values recorded at AMS3A on 15 Oct 13, which are within the monitoring period of the 24-hr TSP, were 87μg/m^3, 85μg/m^3 and 87μg/m^3 respectively. All measured values are well below the Action and Limit Levels.

3.1.9.6 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 97μg/m^3 and 92μg/m^3 respectively, which are below the Action and Limit Levels.

3.1.9.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Canvas/tarpaulin sheet was used to cover sand material stored at WA2 (please refer to photo record – View A above)
2. Works Area WA2's surface was hard-paved, compacted or hydro-seeded
3. Vehicle washing facility was provided at vehicle exit points,

3.1.9.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.9.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

3.1.8 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 194μg/m3 was recorded on 19 Oct 13 (24-hr TSP).

3.1.8.1 According to information provided by the Contractor, land-based construction activity such as stitching geotextile, transloading stitching geotextile and tidy up the stitching area were being undertaken at Works Area WA2 during the monitoring period.

3.1.8.2 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.

3.1.8.3 Photo records shows that vehicle would travel on exposed soil surfaces at those construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.)

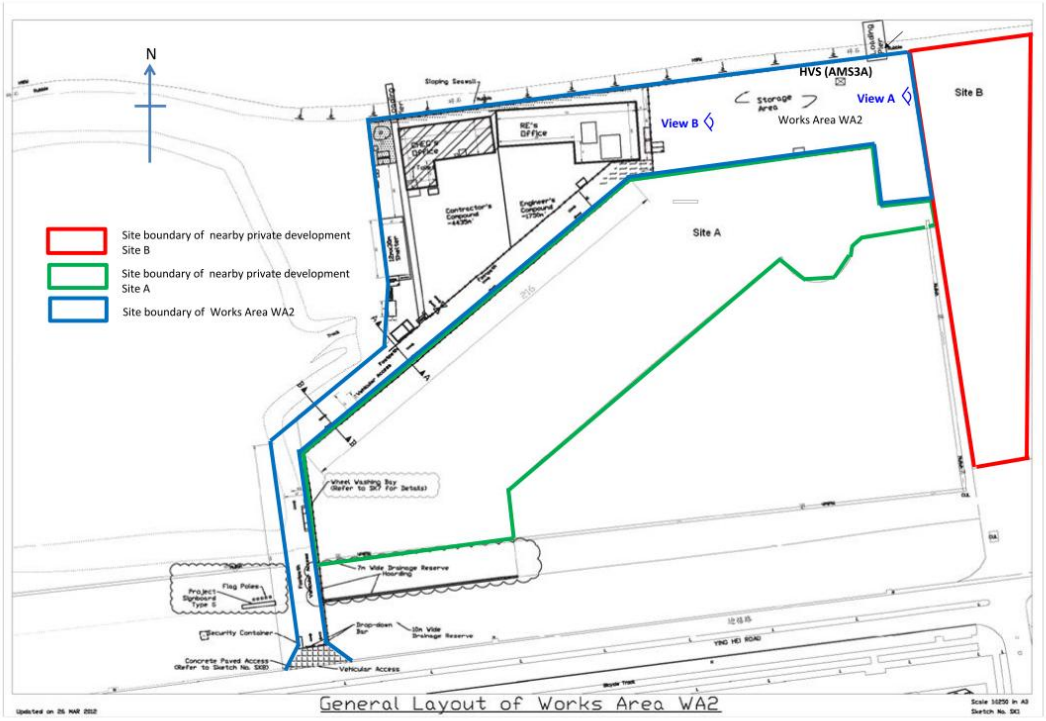


Photo record:

View A (Traffic on dusty surface observed at nearby construction site which do not belongs to this Contract)

View B (Hard paved surface observed at Works Area WA2)

3.1.8.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 18 and 19 Oct 13 (as attached) south-southeast winds was prevailing during the monitoring period. Traffics at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.

3.1.8.5 The 1-hr TSP values recorded at AMS3A on 19 Oct 13, which are within the monitoring period of the 24-hr TSP, were 85$\mu g/m^3$, 85$\mu g/m^3$ and 84$\mu g/m^3$ respectively. All measured values are well below the Action and Limit Levels.

3.1.8.6 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 116$\mu g/m^3$ and 101$\mu g/m^3$ respectively, which are below the Action and Limit Levels.

3.1.8.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

3.1.8.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.8.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

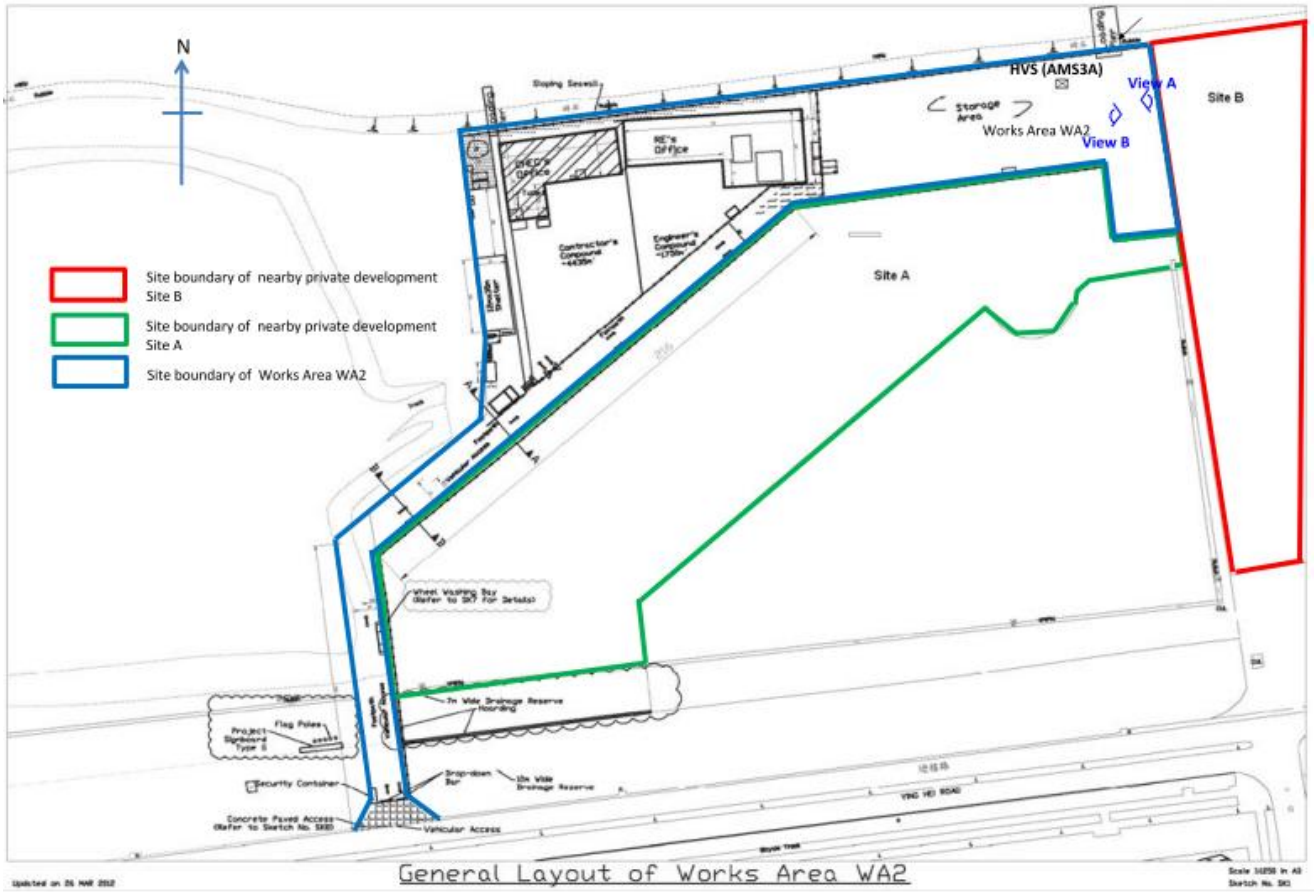
3.1.9 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 221μg/m3 was recorded on 12 Nov 13 (24-hr TSP).

3.1.9.1 According to information provided by the Contractor, land-based construction activity such as installation of sand bags, transloading band drain material and sampling for Type 2 geotextile were being undertaken at Works Area WA2 during the monitoring period.

3.1.9.2 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.

3.1.9.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

3.1.9.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 11 and 12 Nov 13 (as attached) southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.



General Layout of Works Area WA2

Conditions of the construction sites near Works Area WA2:

View A: (Parking lot observed at nearby construction site which do not belongs to this Contract):

View B (Hard paved surface observed at Works Area WA2)

3.1.9.5 The 1-hr TSP values recorded at AMS3A on 12 Nov 13, which are within the monitoring period of the 24-hr TSP, were 86μg/m3, 87μg/m3 and 86μg/m3 respectively. All measured values are well below the Action and Limit Levels.

3.1.9.6 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 60μg/m3 and 57μg/m3 respectively, which are below the Action and Limit Levels.

3.1.9.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

3.1.9.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.9.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

3.1.10 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 244μg/m3 was recorded on 18 Nov 13 (24-hr TSP).

3.1.10.1 According to information provided by the Contractor, land-based construction activity such as installation of sand bags and stitching Type 2 geotextile were being undertaken at Works Area WA2 during the monitoring period.

3.1.10.2 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.

3.1.10.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

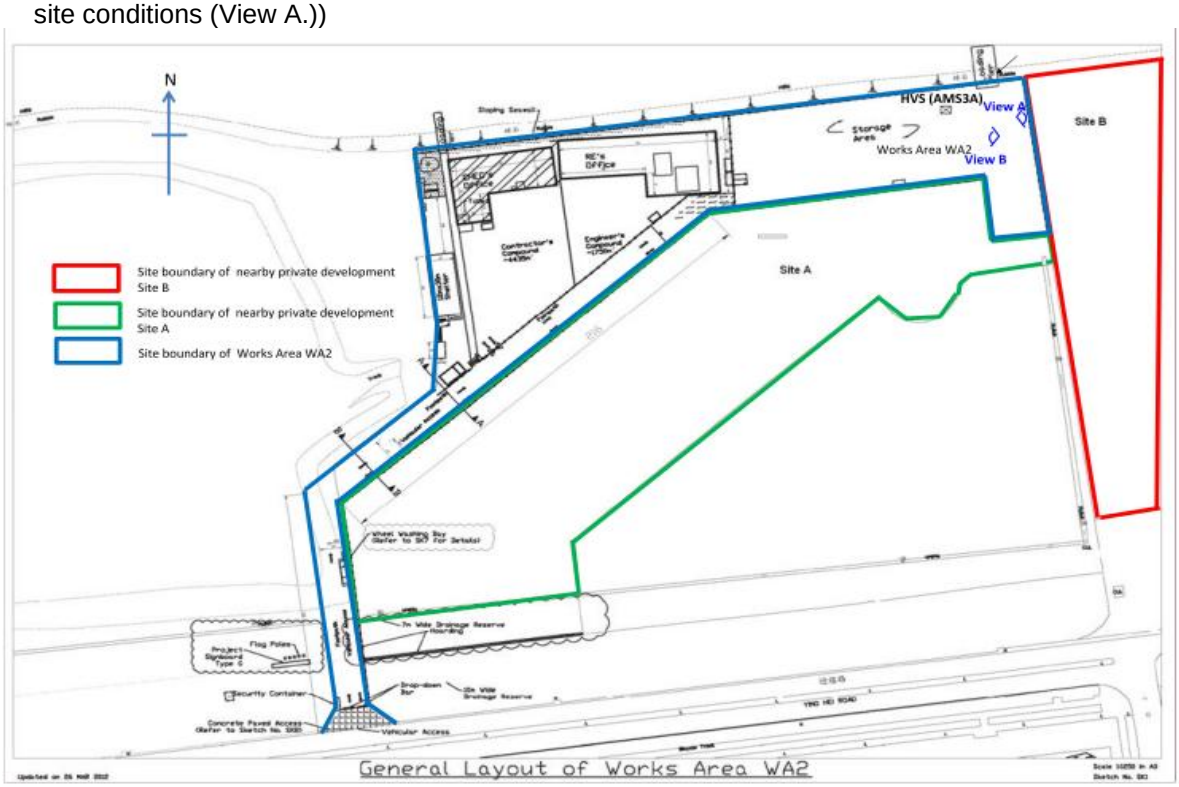


Photo record:

View A (parking lot observed at nearby construction site which do not belongs to this Contract)

View B (Hard paved surface observed at Works Area WA2)

3.1.10.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 18 and 19 Nov 13 (as attached) southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.

3.1.10.5 The 1-hr TSP values recorded at AMS3A on 18 Nov 13, which are within the monitoring period of the 24-hr TSP, were 84μg/m3, 84μg/m3 and 86μg/m3 respectively. All measured values are well below the Action and Limit Levels.

3.1.10.6 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 125μg/m3 and 118μg/m3 respectively, which are below the Action and Limit Levels.

3.1.10.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

3.1.10.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.10.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

3.1.11 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 518μg/m^3 was recorded on 23 Nov 13 (24-hr TSP).

3.1.11.1 According to information provided by the Contractor, land-based construction activity such as installation of sand bags, transloading band drain material and sampling for Type 2 geotextile were being undertaken at Works Area WA2 during the monitoring period.

3.1.11.2 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.

3.1.11.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

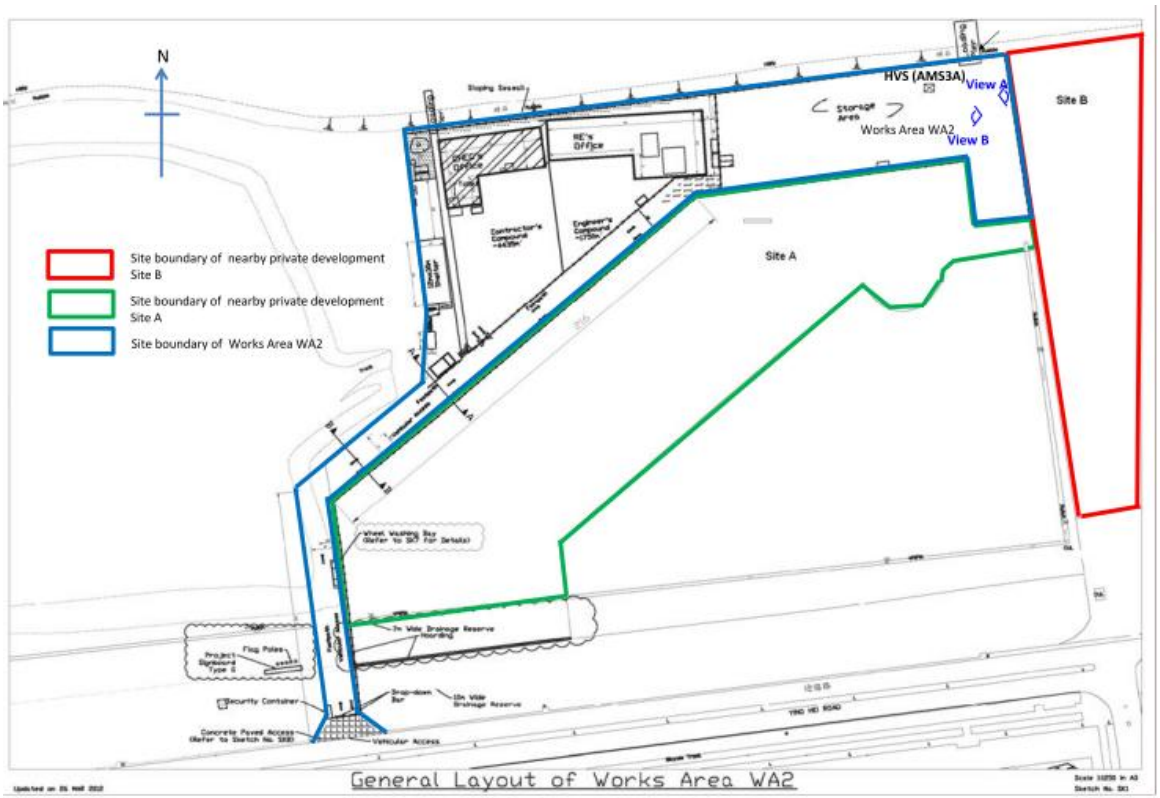


Photo record:

View A (parking lot observed at nearby construction site which do not belongs to this Contract)

View B (Hard paved surface observed at Works Area WA2)

3.1.11.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 22 and 23 Nov 13 (as attached) southeast winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.

3.1.11.5 The 1-hr TSP values recorded at AMS3A on 23 Nov 13, which are within the monitoring period of the 24-hr TSP, were 86μg/m3, 87μg/m3 and 86μg/m3 respectively. All measured values are well below the Action and Limit Levels.

3.1.11.6 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 60μg/m3 and 57μg/m3 respectively, which are below the Action and Limit Levels.

3.1.11.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

3.1.11.8 The dust exceedance was therefore considered not to be due to the Project works.

3.1.11.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

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

3.1.13 The event action plan is annexed in Appendix L.

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 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		
		September 13	October 13	November 13
	NMS2	4	4	4
	NMS3A	4	4	4

Table 3.4 Summary of Number of Monitoring Exceedances for Impact Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			September 13	October 13	November 13
	NMS2	Action	0	0	0
		Limit	0	0	0
	NMS3A	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 L.

3.3 Water Quality Monitoring

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

3.3.2 Twenty seven (28) Action Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting Quarter. (2) Limit Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter.

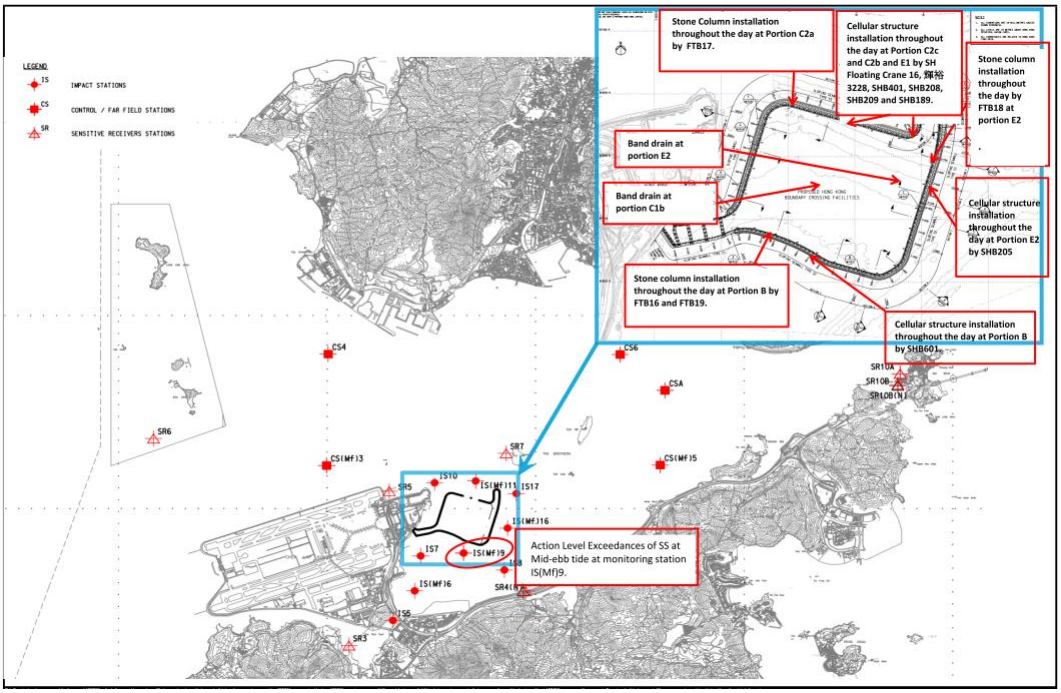
Table 3.5 Summary of Water Quality Exceedances in Sept 13- Nov 13

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	**(1) 22 Nov13**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	**(2) 11 Nov 13 and 16 Sept 13**	**(2) 11 & 20 Nov 13**	**2**	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	0	**(2) 20 Nov13 and18 Oct 13**	0	**2**
	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	**(3) 15 Nov13, 4 Oct 13 and 6 Sept 13**	0	**3**
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	0	0	0	0	0	0	0	**(3) 6 Nov13, 7 Oct 13 and 30 Sept 13**	0	**3**
	Limit	0	0	0	0	0	0	0	**(1) 25 Oct 13**	0	**1**
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	**(3) 4 & 22 Nov 13 and 04 Oct 13**	**(1) 16 Oct 13**	**3**	**1**
	Limit	0	0	0	0	0	0	0	0	0	0

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS17	Action	0	0	0	0	0	0	**(2) 4 &15 Nov 13**	0	**2**	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	**(1) 22 Nov13**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	**(2) 13 Nov13 and 18 Sept 13**	0	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	**(3) 6 Nov13, 7 Oct 13 and 30 Sept 13**	0	**3**
	Limit	0	0	0	0	0	0	0	**(1) 25 Oct 13**	0	**1**
SR6	Action	0	0	0	0	0	0	0	**(1) 6 Nov13**	0	**1**
	Limit	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	**(2) 6 Nov13 and 21 Oct 13**	0	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
Total	**Action**	0	0	0	0	0	0	**7**	**21**	**28**	
	Limit	0	0	0	0	0	0	**0**	**2**	**2**	

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

3.3.3 One (1) Action Level exceedance at measured Suspended Solids (mg/L) where recorded on 06 September 2013 during mid-flood tide at monitoring station IS(Mf)9. For Action Level exceedance at measured Suspended Solids (mg/L), 30.3 mg/L was recorded at Monitoring Station IS(Mf)9.



3.3.3.1 For locations and type of active works carried out on 6 Sept 13, please refer to the above layout map.

3.3.3.2 For action level exceedance of depth averaged SS (in mg/L) recorded at IS(Mf)9 during mid flood tide, active works were carried out at almost the same locations on 4, 6 and 9 Sept 13, but all depth averaged SS (in mg/L) results recorded at all monitoring location on 4 and 9 Sept 13 were all below the Action and Limit Level, which indicates that active works are unlikely to contribute to the action level exceedance recorded at IS(Mf)9.

3.3.3.3 Monitoring results of depth averaged suspended solid (mg/L) at IS10 and IS(Mf)11 which are located downstream to active works during flood tide were 6.2 mg/L and 7.6 mg/L which are below active and limit level and shows that depth averaged suspended solid (mg/L) at downstream to active works were not adversely affected.

3.3.3.4 Turbidity level (NTU) results recorded at IS(Mf)9 is 11.8 NTU during flood tide on 6 Sept 13 which was well below the Action and Limit Level which indicates turbidity level was not adversely affected.

3.3.3.5 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS(Mf)9, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

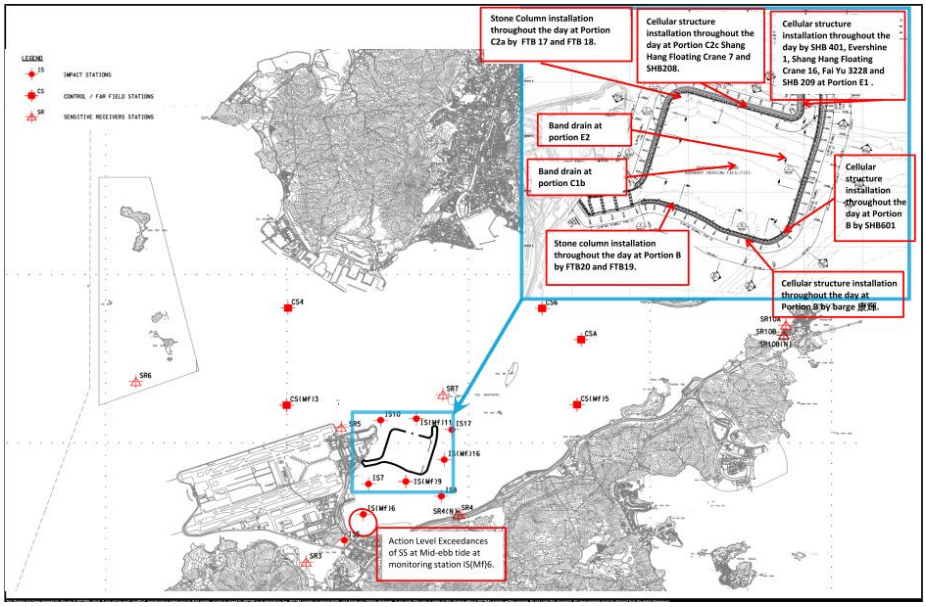
3.3.3.6 The exceedance was likely due to local effects in the vicinity of IS(Mf)9.

3.3.3.7 The exceedance was considered as non-Project related.

3.3.3.8 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.

3.3.3.9 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.4 One (1) Action Level exceedance at measured Suspended Solids (mg/L) where recorded on 16 September 2013 during mid-ebb tide at monitoring station IS(Mf)6. For Action Level exceedances at measured Suspended Solids (mg/L), 25 mg/L was recorded at Monitoring Station IS(Mf)6.



3.3.4.1 For locations and type of active works carried out on 16 Sept 13, please refer to the above layout map.

3.3.4.2 For action level exceedance of depth averaged SS (in mg/L) recorded at IS(Mf)6 during mid ebb tide, Suspended solids values recorded at Impact Station IS7, IS(Mf)9 and IS8 located downstream to and closer to active works than IS(Mf)6 during Mid-Ebb tide were below the Action and Limit Level during the same tide on the same day. This indicates project works is unlikely to contribute to the action level exceedance recorded at IS(Mf)6.

3.3.4.3 Same type of works was carried out at the same locations on 13 and 18 Sept 13 but Suspended Solids values recorded at IS(Mf)6 on 13 and 18 Sept 13 are all below the Action and Limit Level during the same tide on the these days. Turbidity level (NTU) results recorded at IS(Mf)9 is 11.8 NTU during flood tide on 6 Sept 13 which was well below the Action and Limit Level which indicates turbidity level was not adversely affected.

3.3.4.4 Turbidity measurements result at IS(Mf)6 during Ebb tide is 12.2 NTU which is well below the Action and Limit Level. It is considered that the turbidity recorded at IS(Mf)6 were not adversely affected by active works.

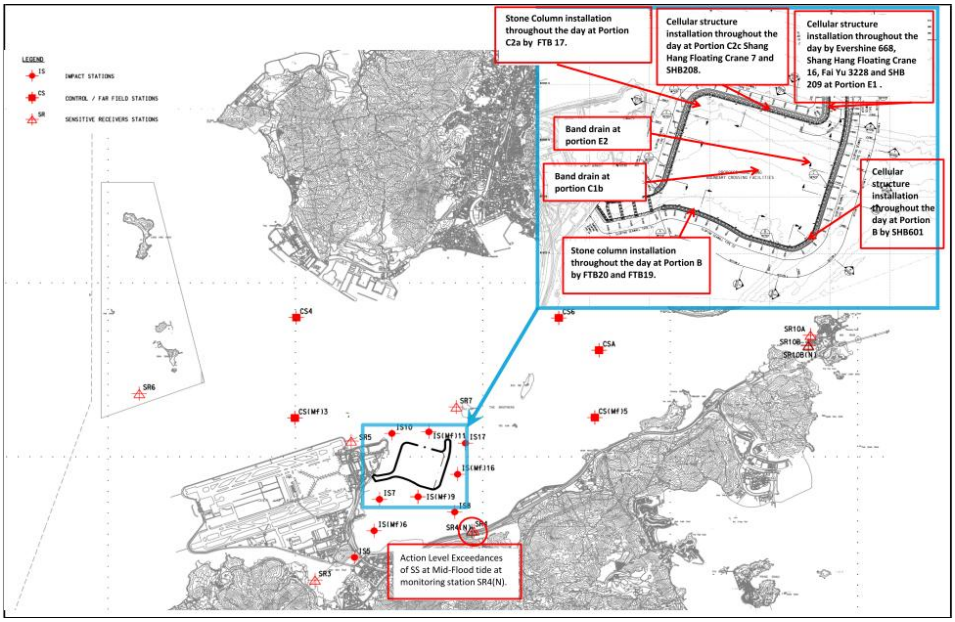
3.3.4.5 The exceedances were likely due to local effects in the vicinity of IS(Mf)6.

3.3.4.6 The exceedances were considered as non-Project related.

3.3.4.7 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.

3.3.4.8 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.5 One (1) Action Level exceedance at measured Suspended Solids (mg/L) where recorded on 18 September 2013 during mid-flood tide at monitoring station SR4(N). For Action Level exceedance at measured Suspended Solids (mg/L), 24 mg/L was recorded at Monitoring Station SR4(N)



3.3.5.1 Please refer the above layout map for activity carried out on 18 Sept 13.

3.3.5.2 IS(Mf)9 and IS(Mf)16 are located closer to the active works than monitoring station SR4(N). Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 and IS(Mf)16 were below the Action and Limit Level which indicates project works is unlikely to contribute to the action level exceedance recorded at SR4(N).

3.3.5.3 The monitoring location of monitoring station SR4(N) are considered upstream to the active works of this project. Therefore it was unlikely that the exceedances recorded at SR4(N) were due to active construction activities of this project.

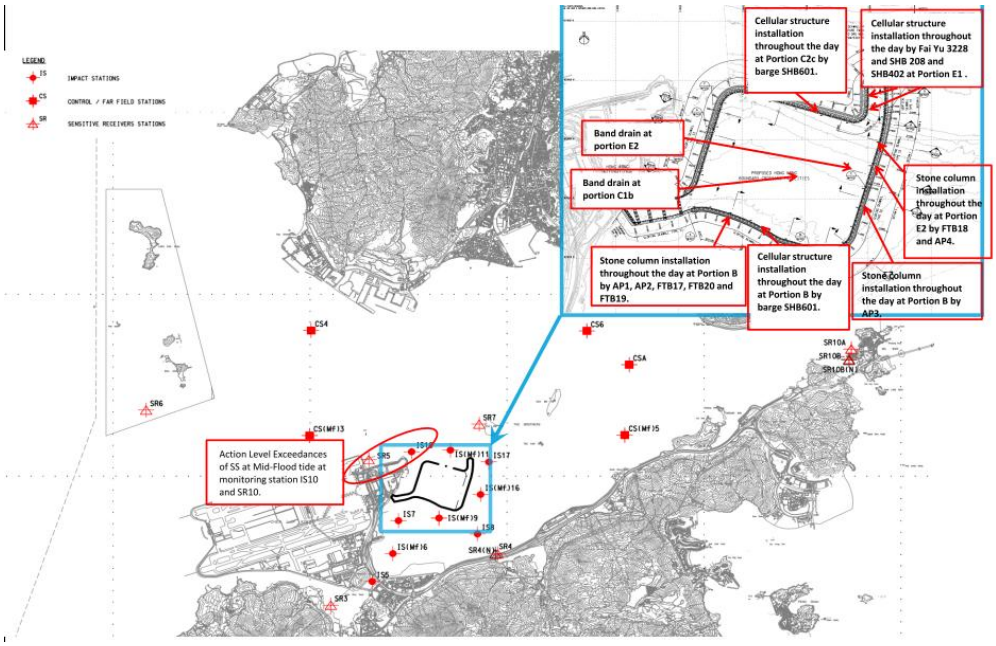
3.3.5.4 Cellular structure installation works were conducted at Portion E2 and at Portion B by construction vessels during mid flood tide on 18 Sept 13 but cellular structure installation was considered unlikely to contribute to elevation of Suspended Solids.

3.3.5.5 The exceedance was likely due to local effects in the vicinity of SR4(N).

3.3.5.6 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.

3.3.5.7 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.6 Two (2) Action Level exceedance at measured Suspended Solids (mg/L) where recorded on 30 Sept 13 during mid-flood tide at monitoring station SR5 and IS (10). For Action Level exceedance at measured Suspended Solids (mg/L), 24.5 mg/L were recorded at Monitoring Station SR5 and IS(10).



3.3.6.1 Please refer the above layout map for activity carried out on 30 Sept 13.

3.3.6.2 No active works were carried out portion C2a, Portion A and Portion C1a. Installation of band drain was carried out at Portion C1b and Cellular Structure installation was carried out at Portion C2c and E1 on 30 Sept 13. These works were unlikely to generate silt plumes or suspended solid. Stone column installation was conducted at Portion B and E2 which is far away from IS10 and SR5. (For location of each portion please refer to below Layout - Portion of Marine Work)

3.3.6.3 Suspended solids values recorded at Impact Stations IS(Mf)11 and IS7 which is closer to the active works at Portion E2 and Portion B respectively than monitoring station IS10 and SR5 were below the action and limit level which indicates that active works from portion E2 and B is unlikely to cause SS exceedance at monitoring station IS10 and SR5.

3.3.6.4 Turbidity level (NTU) results recorded at IS10 and SR5 were 14.2 NTU and 20.4 NTU respectively during flood tide on 30 Sept 13 which was below the Action and Limit Level which indicates turbidity level was not adversely affected.

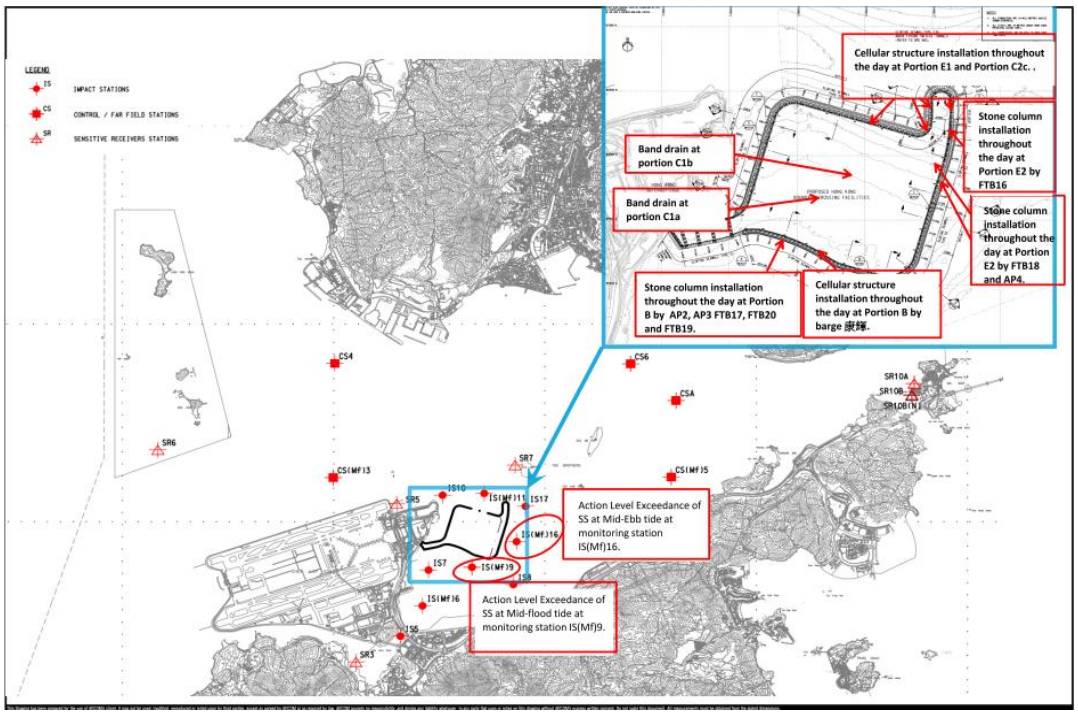
3.3.6.5 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS10 and SR5, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.6.6 The exceedance was likely due to local effects in the vicinity of IS10 and SR5.

3.3.6.7 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.

3.3.6.8 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.7 Two (2) Action Level exceedances at measured Suspended Solids (mg/L) were recorded on 04 Oct 2013 at monitoring station IS(Mf) 16 and IS(Mf)9 at Mid-Ebb tide and Mid-Flood tide respectively. For Action Level exceedances at measured Suspended Solids (mg/L), 32.9 mg/L and 25.4 mg/L was recorded at Monitoring Station IS(Mf)16 and IS(Mf)9 respectively.



3.3.7.1 For locations and type of active works carried out on 4 Oct 13, please refer to the above layout map.

3.3.7.2 Impact Stations IS10 and IS(Mf)11 are downstream and closer to the active works at Portion E1 and E2 than monitoring station IS(Mf)9 during flood tide. Suspended solids value recorded on 4 Oct 13 at Impact Stations IS10 and IS(Mf)11 is 9.1mg/L and 7.5mg/L during flood tide respectively which were below the action and limit level. Hence active works from portion E1 and E2 were unlikely to cause SS exceedance at monitoring station IS(Mf)9 during mid flood tide.

3.3.7.3 IS(Mf)9 was considered upstream to active works at Portion B during flood tide which SS level were unlikely to be adversely affected by active works at Portion B.

3.3.7.4 Turbidity level (NTU) result recorded on 4 Oct 13 at IS(Mf)16 during ebb tide and IS(Mf)9 during flood tide is 22.7 NTU and 22.6 NTU respectively which were below the Action and Limit Level, this indicates turbidity level was not adversely affected.

3.3.7.5 Same type of works were carried out at the same location on 2 and 7 Oct 13 but Suspended Solids values recorded at IS(Mf)16 and IS(Mf)9 on 2 and 7 Oct 13 are all below the Action and Limit Level during the same tide on the same day which indicates active works is unlikely to adversely affect the water quality at IS(Mf)16 and IS(Mf)9.

3.3.7.6 When impact water quality monitoring was carried out at IS(Mf)16 during mid ebb tide and at IS(Mf)9 during mid flood tide, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

Photo record shows that no defect was observed on the perimeter silt curtain nearby IS(Mf)9.

Photo record shows that no defect was observed on the perimeter silt curtain nearby IS(Mf)16.

Photo record shows that localised silt curtain was implemented during stone column installation.

3.3.7.7 The recorded suspended solids values recorded on 4 Oct 13 at monitoring station IS7, IS8 & IS17 during both tide were below the action and limit level which shows that the water quality nearby IS(Mf)16 during ebb tide and IS(Mf)9 during flood tide were not adversely affected.

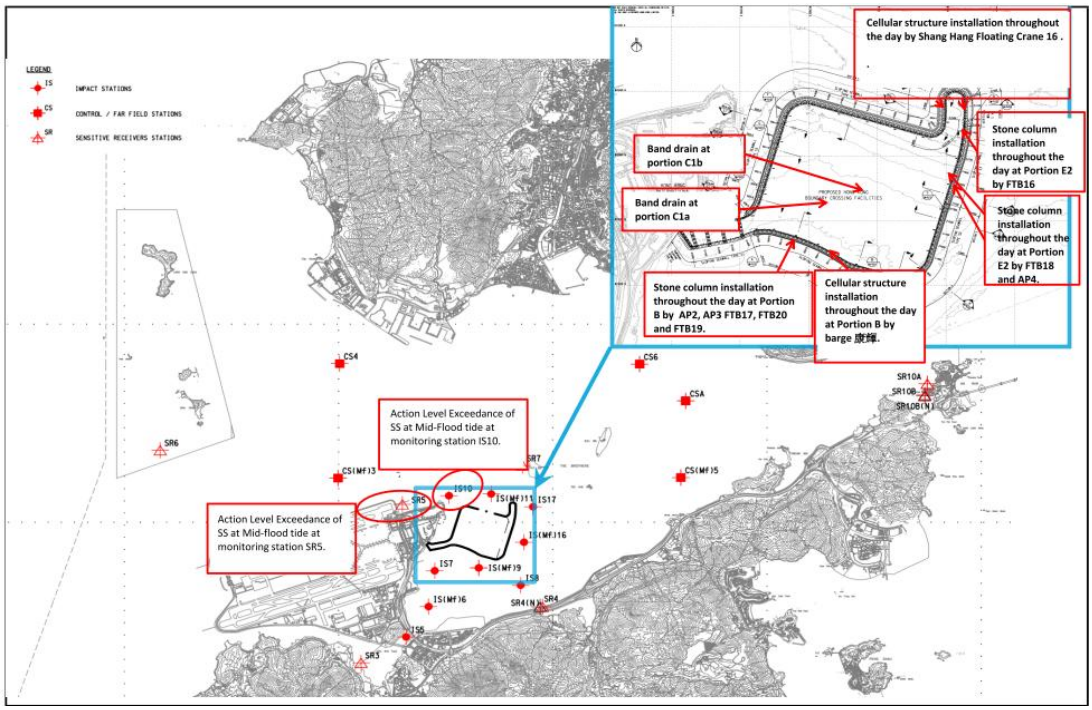
3.3.7.8 The exceedances were likely due to local effects in the vicinity of IS(Mf)16 and IS(Mf)9.

3.3.7.9 The exceedance was considered as non-Project related.

3.3.7.10 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.

3.3.7.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.8 Two (2) Action Level exceedances at measured Suspended Solids (mg/L) were recorded on 7 Oct 2013 during mid-flood tide at monitoring station IS10 and SR5. For Action Level exceedances at measured Suspended Solids (mg/L), 25 mg/L and 24.8 mg/L were recorded at Monitoring Station IS10 and SR5 respectively.



3.3.8.1 Please refer attached Layout Map for work activity carried out on 7 Oct 13.

3.3.8.2 No active works were carried out at portion C2a, C2c and Portion A. Installation of band drain was carried out at Portion C1b & Portion C1a and Cellular Structure installation was carried out at Portion E1 and C2b on 7 Oct 13. These works were unlikely to generate silt plumes or suspended solid. Stone column installation was conducted at Portion B, E1 and E2 which are far away from IS10 and SR5. (For location of each portion please refer to attached Layout - Portion of Marine Work)

3.3.8.3 IS(Mf)11 and IS17 which are closer to the active works at Portion E2 than it is for monitoring station IS10 and SR5 and the suspended solid value of IS(Mf)11 and IS17 at mid flood tide were below the action and limit level which indicates that active works from portion E2 were unlikely to cause SS exceedance at monitoring station IS10 and SR5.

3.3.8.4 IS7 which is closer to the active works at portion B than it is for monitoring station IS10 and SR5 and the suspended solids level of IS7 at mid flood tide were below the action and limit level which indicates that active works from portion B were unlikely to cause SS exceedance at monitoring station IS10 and SR5.

3.3.8.5 Turbidity level (NTU) result recorded at IS10 and SR5 is 11.7 NTU and 12.6 NTU respectively during flood tide on 7 Oct 13 which was below the Action and Limit Level which indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 7 Oct 13)

3.3.8.6 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS10 and SR5, no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.8.7 Strong wind and rough sea condition were experienced during impact water quality monitoring conducted during mid flood tide at monitoring. (Please see photo record which shows the sea condition recorded on 7 Oct 13.)

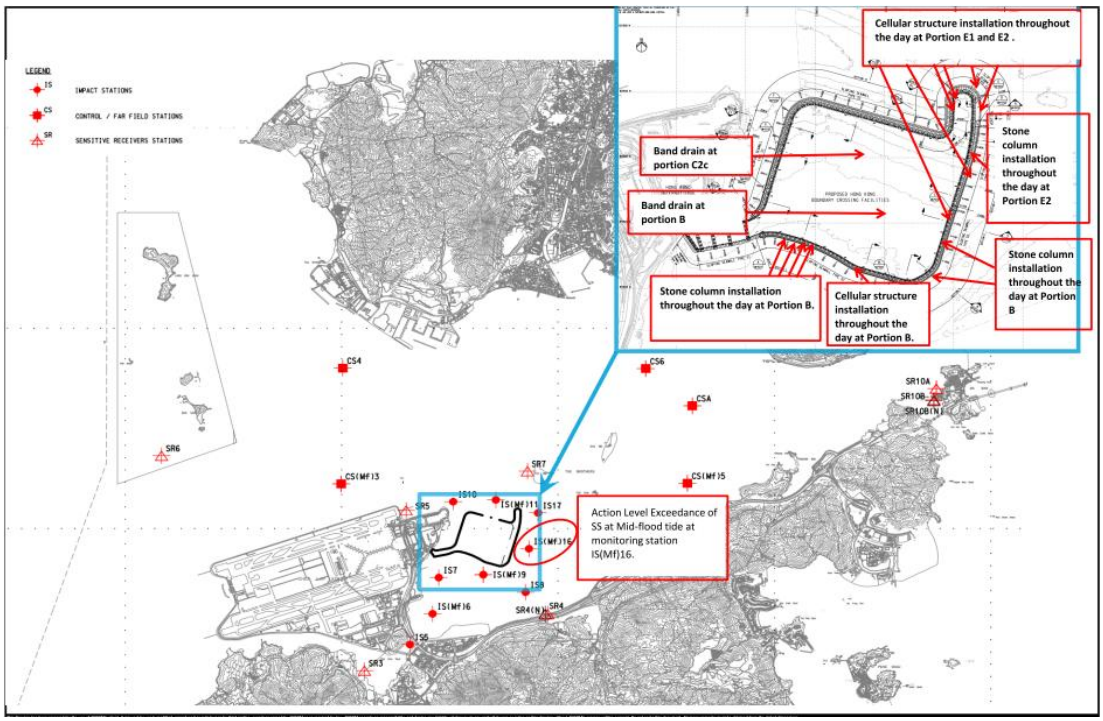
3.3.8.8 The exceedances were likely due to local effects in the vicinity of IS10 and SR5..

3.3.8.9 The exceedances were considered as non-Project related.

3.3.8.10 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.

3.3.8.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.9 One (1) Action Level exceedance at measured Suspended Solids (mg/L) where recorded on 16 Oct 13 2013 during mid-flood tide at monitoring station IS(Mf)16. For Action Level exceedance at measured Suspended Solids (mg/L), 32 mg/L was recorded at Monitoring Station IS(Mf)16



3.3.10.1 Please refer the above layout map for activity carried out on 16 Oct 13.

3.3.10.2 Impact Stations IS10 and IS(Mf)11 are downstream and closer to the active works at Portion E1 and E2 than monitoring station IS(Mf)16 during flood tide. Suspended solids value recorded on 16 Oct 13 at Impact Stations IS10 and IS(Mf)11 is 4.2mg/L and 6.4mg/L during flood tide respectively. The recorded suspended solids values are below the action and limit level which indicate that active works at Portion E1 and E2 on 16 Oct 13 were unlikely to cause SS exceedance at monitoring station IS(Mf)16 during mid flood tide.

3.3.10.3 IS(Mf)16 is considered upstream to active works during flood tide, therefore active works is unlikely to cause SS exceedance at monitoring station IS(Mf)16 during mid flood tide.

3.3.10.4 Turbidity level (NTU) result recorded on 16 Oct 13 at IS(Mf)16 is 20.5 NTU during flood tide which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see below photo record of the sea condition taken on 16 Oct 13.)

Photo record of the sea condition taken on 16 Oct 13

3.3.10.5 When impact water quality monitoring was carried out at IS(Mf)16 during mid flood tide, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.10.6 No defect was observed on the perimeter silt curtain during monitoring conducted at nearby IS(Mf)16 on 16 Oct 13.

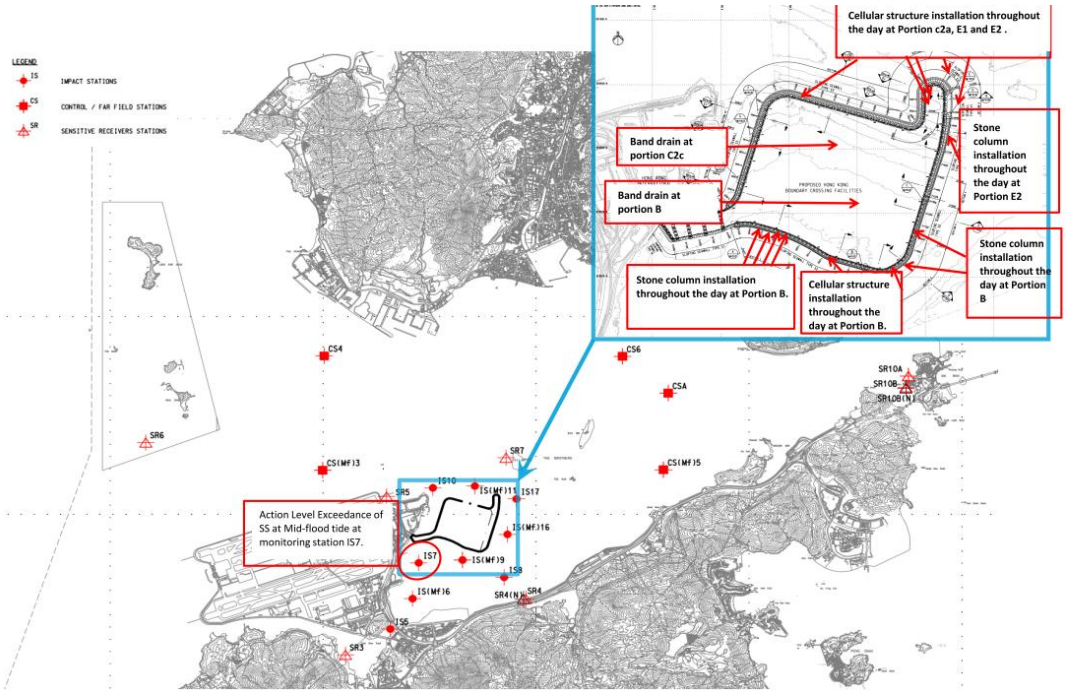
3.3.10.7 The exceedances were likely due to local effects in the vicinity of IS(Mf)16.

3.3.10.8 The exceedances were considered as Non-project related

3.3.10.9 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.

3.3.10.10 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday

3.3.10 One (1) Action Level exceedance at measured Suspended Solids (mg/L) was recorded on 18 Oct 2013 at monitoring station IS7 at Mid-Flood tide. For Action Level exceedance at measured Suspended Solids (mg/L) at IS17, 27.6 mg/L were recorded.



3.3.10.1 For locations and type of active works carried out on 18 Oct 13, please refer to the above layout map.

3.3.10.2 Same type of works were carried out at the same location on 16 and 21 Oct 13 but Suspended Solids values recorded at IS7 on 16 and 21 Oct 13 are all below the Action and Limit Level during the same tide.

3.3.10.3 Turbidity level (NTU) result recorded on 18 Oct 13 at IS7 is 8.7 NTU during flood tide which was below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 18 Oct 13.)

3.3.10.4 When impact water quality monitoring was carried out at IS7 during mid flood tide on 18 Oct 13, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.10.5 Photo record shows that no defect was observed on the perimeter silt curtain nearby IS7 on 18 Oct 13.

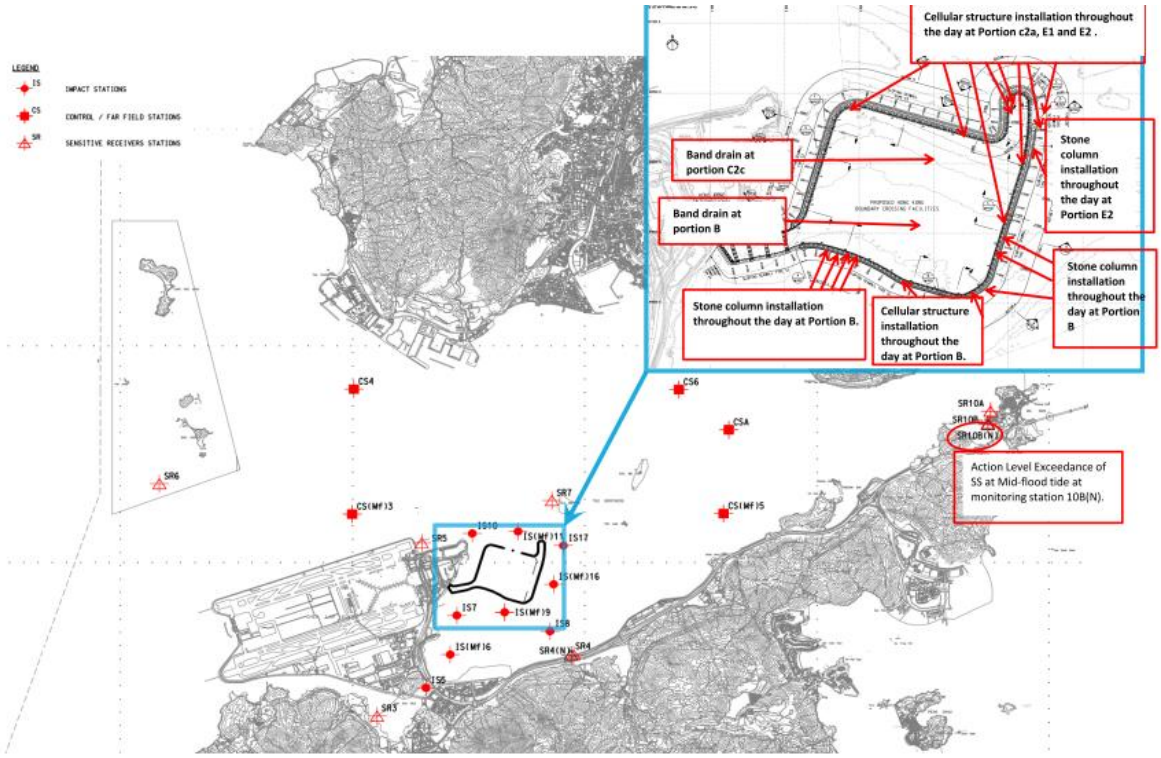
3.3.10.6 The exceedances were likely due to local effects in the vicinity of IS7.

3.3.10.7 The exceedances were considered as Non-project related.

3.3.10.8 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.

3.3.10.9 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.11 One (1) Action Level exceedances at measured Suspended Solids (mg/L) were recorded on 21 Oct 2013 at monitoring station SR10B(N) at Mid-Flood tide. For Action Level exceedance at measured Suspended Solids (mg/L), 23.8 mg/L were recorded at Monitoring Station SR10B(N).



3.3.11.1 For locations and type of active works carried out on 21 Oct 13, please refer to the above layout map.

3.3.11.2 IS(Mf)11 and IS10 are located downstream and closer to the active works than monitoring station SR10B(N) during flood tide. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during flood tide on the same day at IS(Mf)11 and IS10 were below the Action and Limit Level which indicates project work is unlikely to contribute to the action level exceedance recorded at SR10B(N).

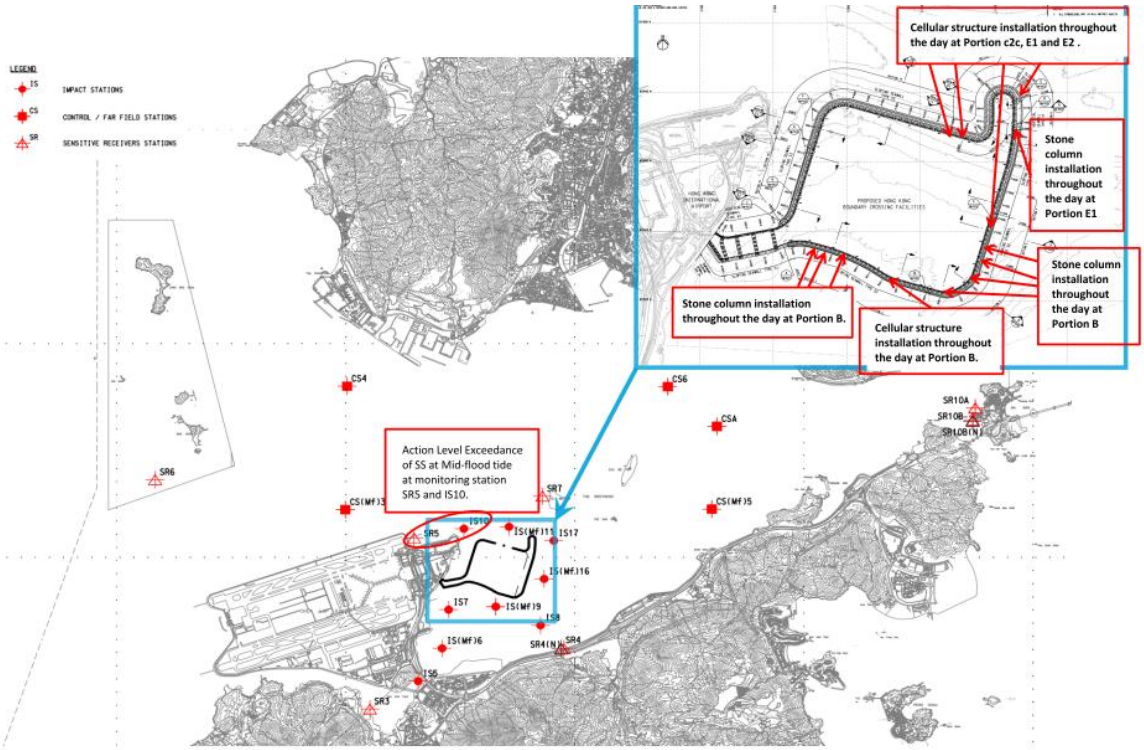
3.3.11.3 The monitoring location of monitoring station SR10B(N) are considered upstream and remote to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at SR10B(N) during flood tide was due to active construction activities of this project.

3.3.11.4 The exceedance was likely due to local effects in the vicinity of SR10B(N).

3.3.11.5 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.

3.3.11.6 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.12 Two (2) Limit Level exceedances at measured Suspended Solids (mg/L) were recorded on 25 Oct 2013 at monitoring station IS10 and SR5 at Mid-Flood tide. For Limit Level exceedance at measured Suspended Solids (mg/L), 54.7 mg/L and 36.8 mg/L were recorded at Monitoring Station IS10 and SR5 respectively at Mid-Flood tide.



3.3.12.1 For locations and type of active works carried out on 25 Oct 13, please refer to the above layout map.

3.3.12.2 No active works were carried out portion A, C2a, C1a and C1b. Cellular Structure installation was carried out at Portion C2c, E1, E2 and B on 25 Oct 13 and stone column installation was conducted at Portion B and E1 which is relatively far away from IS10 and SR5.

3.3.12.3 The location and type of active works conducted were almost the same on 23, 25 and 28 Oct 13 at mid flood tide but no exceedance was recorded at IS10 and SR5 on 23 and 28 Oct 13. This indicates that the exceedances at monitoring station IS10 and SR5 were unlikely to be contributed by active works.

3.3.12.4 Impact Stations IS(Mf)11 and IS7 is located closer to the active works of Portion E2 and B respectively than monitoring station IS10 and SR5 on 25 Oct 13, suspended solids values recorded at IS(Mf)11 and IS7 were below the action and limit level which indicates that active works from portion C2c, E1, E2 and B were unlikely to cause SS exceedances at monitoring station IS10 and SR5.

3.3.12.5 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS10 and SR5, appearance of sea water was relatively turbid than it is for other monitoring stations but no silt plume was observed to flow from the inside to the outside of the site boundary. Hence, on-site observations did not support that the elevated SS was due project works.

3.3.12.6 Turbidity level (NTU) results recorded at IS10 and SR5 were 11.6 NTU and 11.8 NTU respectively during flood tide on 25 Oct 13 which was below the Action and Limit Level and this indicates turbidity level was not adversely affected.

3.3.12.7 No turbid water was observed and no silt plume was observed to flow from the inside to the outside of the site boundary when monitoring was conducted at monitoring station IS(Mf)11 and CS(Mf)3 which is the closest monitoring station next to IS10 and SR5 respectively.

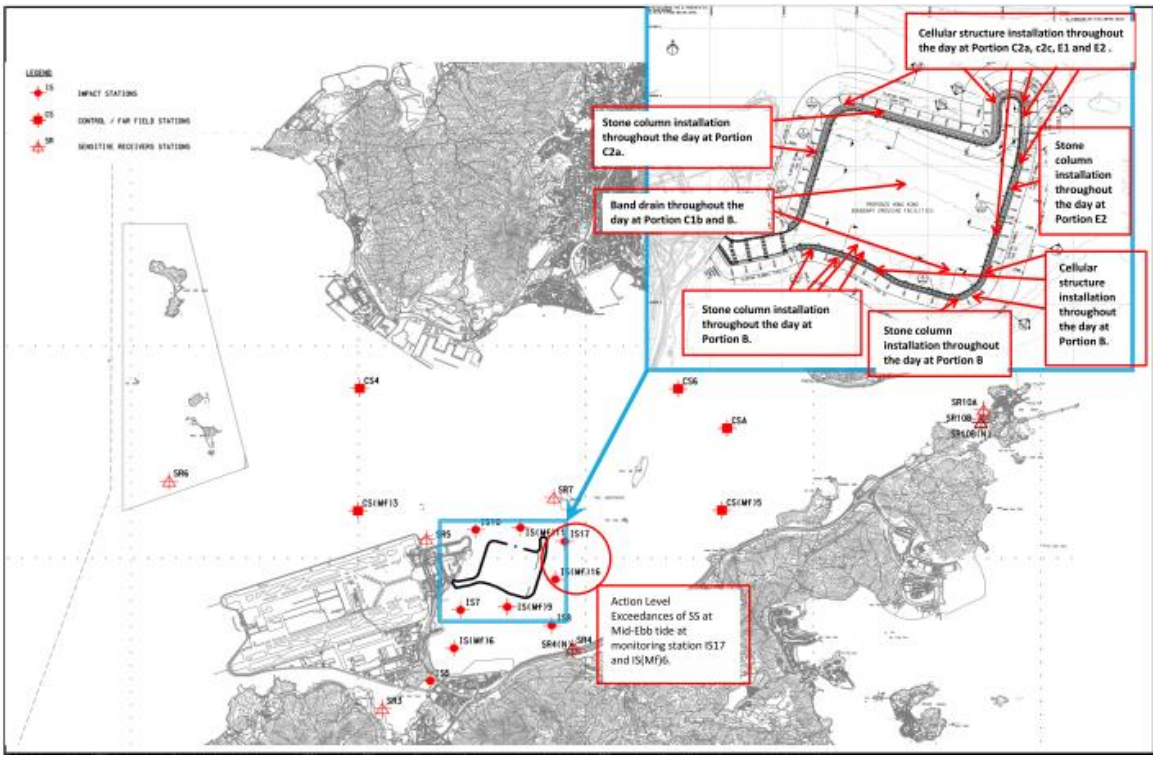
3.3.12.8 The exceedances were likely due to local effects in the vicinity of IS10 and SR5.

3.3.12.9 The exceedances were considered as Non-project related

3.3.12.10 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.

3.3.12.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.13 Two (2) Action Level exceedances at measured Suspended Solids (mg/L) were recorded on 04 Nov 2013 at monitoring station IS(Mf) 16 and IS17 at Mid-Ebb tide and Mid-Flood tide respectively. For Action Level exceedances at measured Suspended Solids (mg/L), 24.3 mg/L and 31.6 mg/L were recorded at Monitoring Station IS(Mf)16 and IS(Mf)9 respectively.



3.3.13.1 For locations and type of active works carried out on 4 Nov 13, please refer to the above layout map.

3.3.13.2 For action level exceedance of suspended solid recorded at IS(Mf)16 and IS17 during mid ebb tide, active works were carried out at almost the same locations on 1, 4 and 6 Nov 13, but all Suspended Solids results recorded at all monitoring location on 1 and 6 Nov 13 are all below the Action and Limit Level during the same tide on the same day which indicates active works is unlikely to adversely affect the water quality at IS(Mf)16 and IS17

3.3.13.3 When impact water quality monitoring was carried out during mid ebb tide at monitoring location IS(Mf)16 and IS17on 4 Nov 13, no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.13.4 Turbidity level (NTU) result recorded on 4 Nov 13 at IS(Mf)16 during ebb tide and IS17 during flood tide is 17.2 NTU and 18.4 NTU respectively which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 4 Nov 13.)

3.3.13.5 Photo record shows that no defect was observed on the perimeter silt curtain nearby IS(Mf)16 and IS17. (Please see attached photo record)

3.3.13.6 When impact water quality monitoring was carried out at IS(Mf)16 during mid ebb tide and at IS(Mf)9 during mid flood tide, no discoloration of sea water was observed and no silty plume were observed to flow from the inside to the outside of the site boundary.

3.3.13.7 Photo record of the sea condition taken on 4 Nov 13

Photo record of site condition nearby IS(Mf)6

Photo record shows site condition nearby IS17

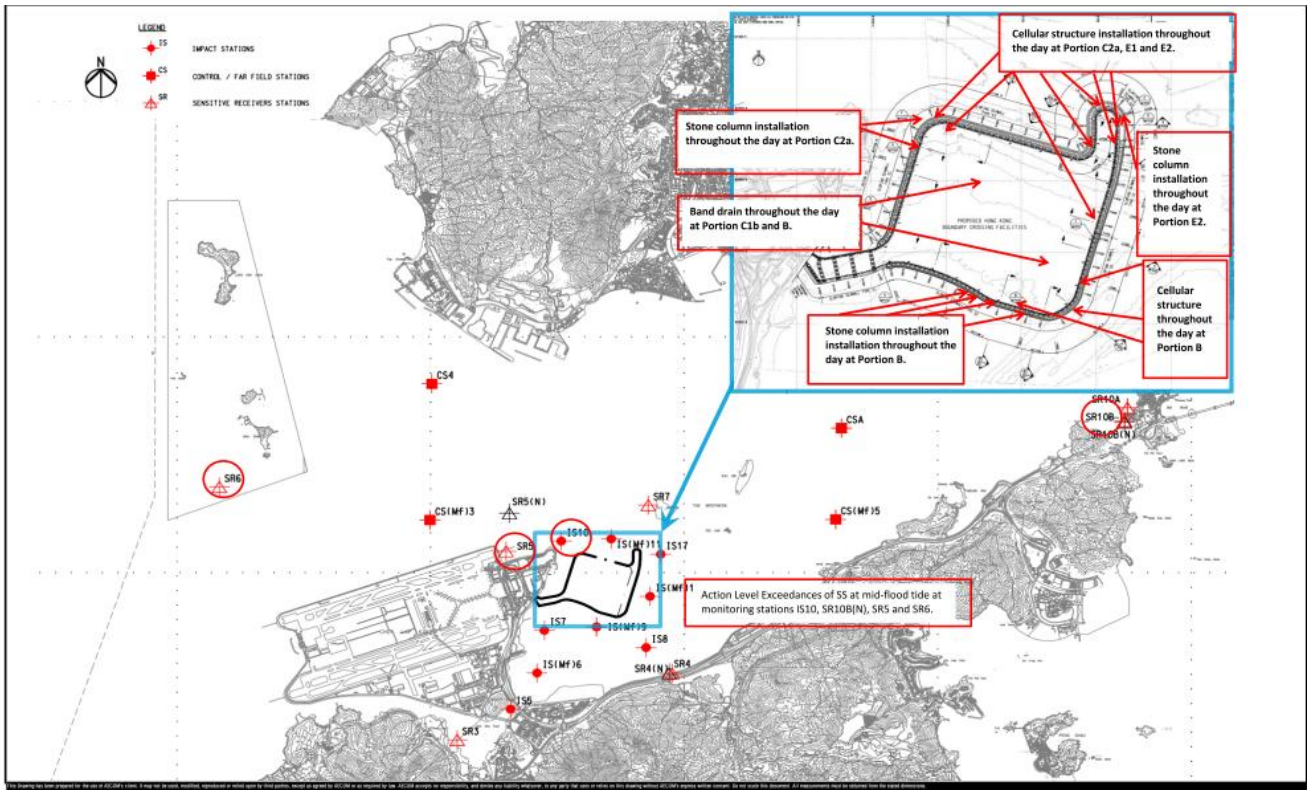
3.3.13.8 The recorded suspended solids values recorded on 4 Nov13 at monitoring station IS(Mf)11, IS(Mf)9 and IS(Mf)8 during ebb tide were below the action and limit level which shows that the water quality nearby IS(Mf)16 and IS17during ebb tide were not adversely affected.

3.3.13.9 The exceedances were likely due to local effects in the vicinity of IS(Mf)16 and IS17.

3.3.13.10 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.

3.3.13.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.14 Four (4) Action Level exceedances at measured Suspended Solids (mg/L) were recorded on 06 Nov 2013 during mid-flood tide at monitoring station IS10 and SR5. For Action Level exceedances at measured Suspended Solids (mg/L), 30.8 mg/L, 27.0 mg/L, 31.9 mg/L and 25.2 mg/L were recorded at Monitoring Station IS10, SR10B(N) , SR5 and SR6 respectively.



3.3.14.1 Active works like stone column and cellular structure installation were carried out at Portion C2a, E1, E2 and B but no exceedance was recorded at IS(Mf)11 which IS(Mf)11 is considered downstream and closer to active works of Portion E1 and E2. No exceedance was recorded at IS7 which IS7 is considered downstream to active works of Portion B.

3.3.14.2 Exceedances (IS10, SR5 and SR6) recorded at stations which are considered located downstream and closest to active works at Portion C2a during flood tide.

3.3.14.3 IS7 which is closer to the active works at portion B than it is for monitoring station IS10 and SR5 and the suspended solids level of IS7 at mid flood tide were below the action and limit level which indicates that active works from portion B were unlikely to cause SS exceedance at monitoring station IS10 and SR5.

3.3.14.4 Hence, active works like stone column and cellular structure installation carried out at Portion E1, E2 and B were unlikely to cause exceedance.

3.3.14.5 When monitoring was conducted, no turbid water was observed at SR7 and IS(Mf)11, but turbid water was observed at IS10, SR5 an SR6 which is located downstream to to active works at Portion C2a during flood tide.

3.3.14.6 However, with refer to the silt curtain condition on 6 and 8 Nov 13, defects of the perimeter silt curtain was observed at southwest and northwest of the construction site but no exceedance was observed on 8 Nov 13 at IS10, SR5, SR6 and SR10B(N).

3.3.14.7 Almost same type and location of works were conducted by vessels on 4, 6 and 8 Nov 13 but no exceedance was recorded on 4 and 8 Nov 13, indicating works conducted by vessels unlikely to cause the exceedances.

3.3.14.8 Monitoring results show no recurrence of exceedance of SS at IS10, SR5, SR6 and SR10B(N) on 8 Nov 13 indicating the exceedance of SS at IS10, SR5, SR6 and SR10B(N) during flood tide are unlikely due to marine work activities shown on the attached layout.

3.3.14.9 SR10B(N) is considered upstream to active works during flood tide and no exceedance was recorded at CS6, CSA, CS(Mf)5, IS(Mf)16 and IS7 which are closer to the HKBCF. Therefore, the exceedance recorded at SR10B(N) is not likely to be contributed from active work of HKBCF which is located downstream to SR10B(N).

3.3.14.10 As such, the exceedances recorded at IS10, SR5, SR6 and SR10B(N) were considered as non-Project related.

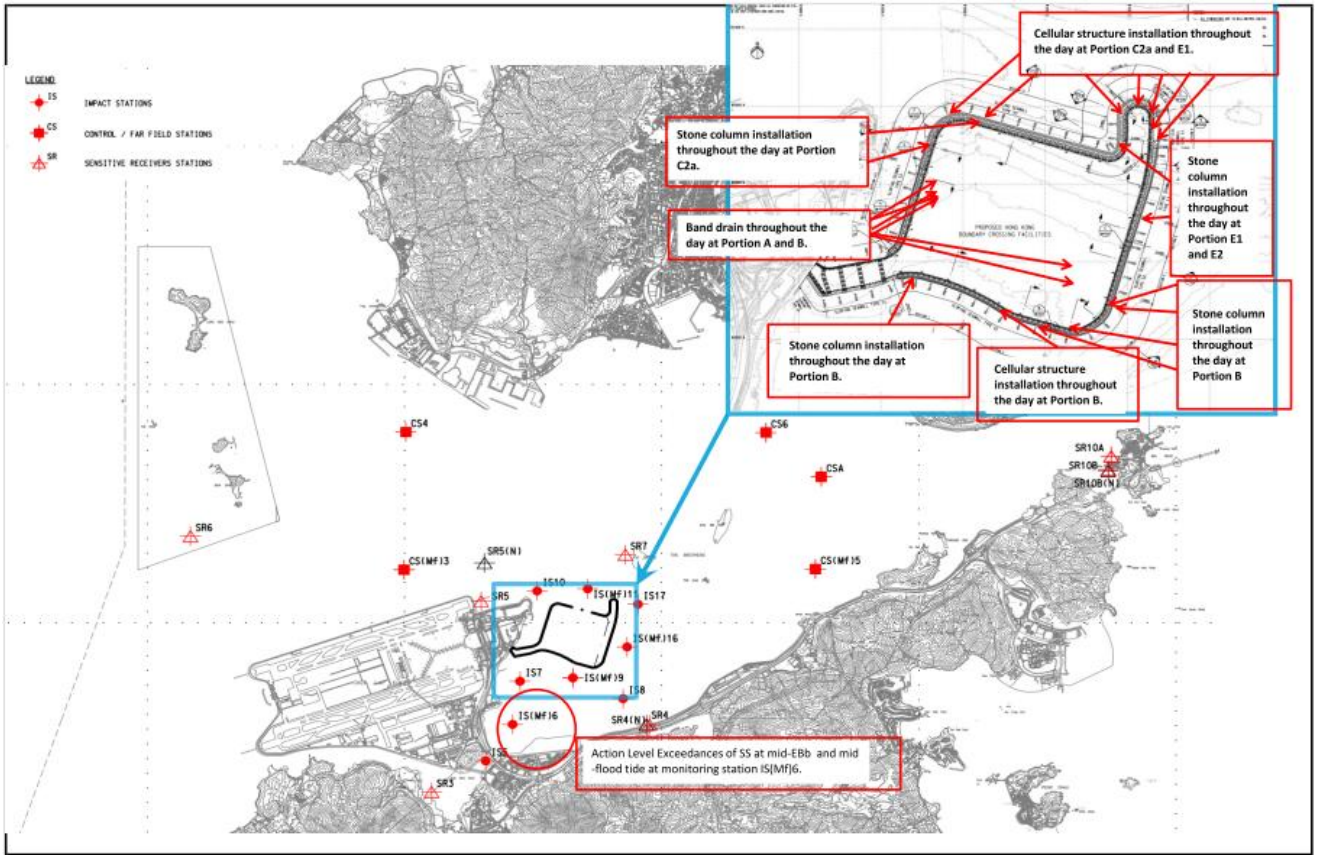
3.3.14.11 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

3.3.14.12 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.14.13 Photo record of the sea condition taken on 6 Nov 13

Condition of sea and silt curtain on 6 November 2013 (the northwest side of BCF)

3.3.15 Two (2) Action Level exceedances at measured Suspended Solids (mg/L) where recorded on 11 Nov 13 2013 during mid-flood tide and mid-ebb tide at monitoring station IS(Mf)16. For Action Level exceedance at measured Suspended Solids (mg/L), 27.9mg/L and 26.4mg/L was recorded at Monitoring Station IS(Mf)16



3.3.15.1 Please refer the above layout map for activity carried out on 11 Nov 13.

3.3.15.2 Suspended Solids values recorded at Impact Station IS(Mf)9 and IS7 which are closer to the works than monitoring station IS(Mf)6 are all below the Action and Limit Level during the same tide on the same day. This indicates that active works is unlikely to cause the exceedances at IS(Mf)6.

3.3.15.3 Almost same type and location of works were carried out at the same location on 8, 11 and 13 Nov 13 but Suspended Solids values recorded at IS(Mf)6 on 8 and 13 Nov 13 are all below the Action and Limit Level during the same tide on the same day. This indicates that active works is unlikely to cause the exceedance at IS(Mf)6.

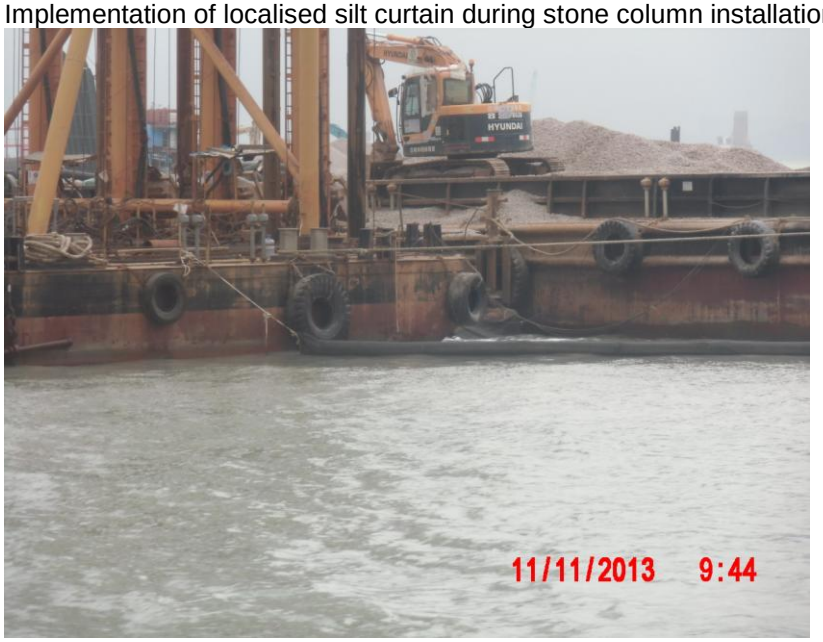
3.3.15.4 Monitoring results show no recurrence of exceedance of SS at IS(Mf)6 on 13 Nov 13 indicating the exceedances of SS at IS(Mf)6 during flood and ebb tide are unlikely due to marine work activities shown on the attached layout map.

3.3.15.5 Localised silt curtain was implemented during stone column installation. (Please refer to the photo record attached)

3.3.15.6 No defects of perimeter silt curtain was observed at the proximity of IS(Mf)6. (Please refer to the photo record attached)

Photo record of the sea condition taken on 11 Nov 13

Implementation of localised silt curtain during stone column installation



Condition of silt curtain at near the monitoring station IS(Mf)6

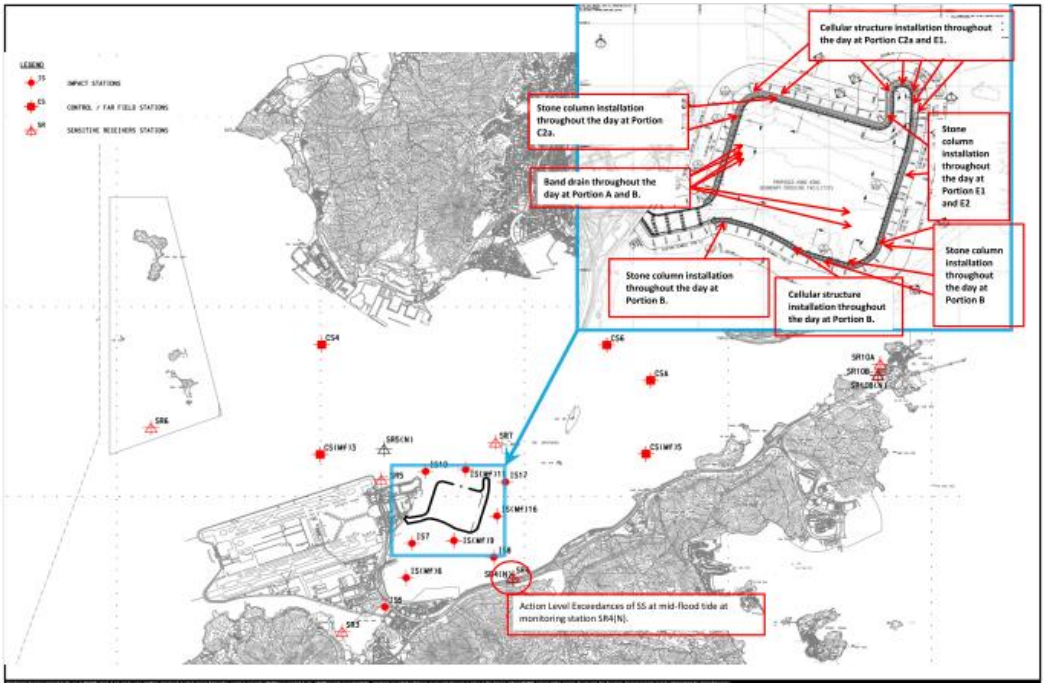
3.3.15.7 As such, the exceedances recorded at IS(Mf)6 during both tide were considered as non-Project related.

3.3.15.8 The exceedance was likely due to local effects in the vicinity of IS(Mf)6.

3.3.15.9 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.

3.3.15.10 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.16 One (1) Action Level exceedance at measured Suspended Solids (mg/L) was recorded on 13 Nov 13 during mid-flood tide at monitoring station SR4(N). For Action Level exceedance at measured Suspended Solids (mg/L), 33.8 mg/L was recorded.



3.3.16.1 Please refer the above layout map for activity carried out on 13 Nov13.

3.3.16.2 IS(Mf)9, IS8 and IS(Mf)16 are located closer to the active works than monitoring station SR4(N). Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9, IS8 and IS(Mf)16 were below the Action and Limit Level which indicates project works is unlikely to contribute to the action level exceedance recorded at SR4(N).

3.3.16.3 The monitoring location of monitoring station SR4(N) are considered upstream to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at SR4(N) was due to active construction activities of this project.

3.3.16.4 The exceedance was likely due to local effects in the vicinity of SR4(N).

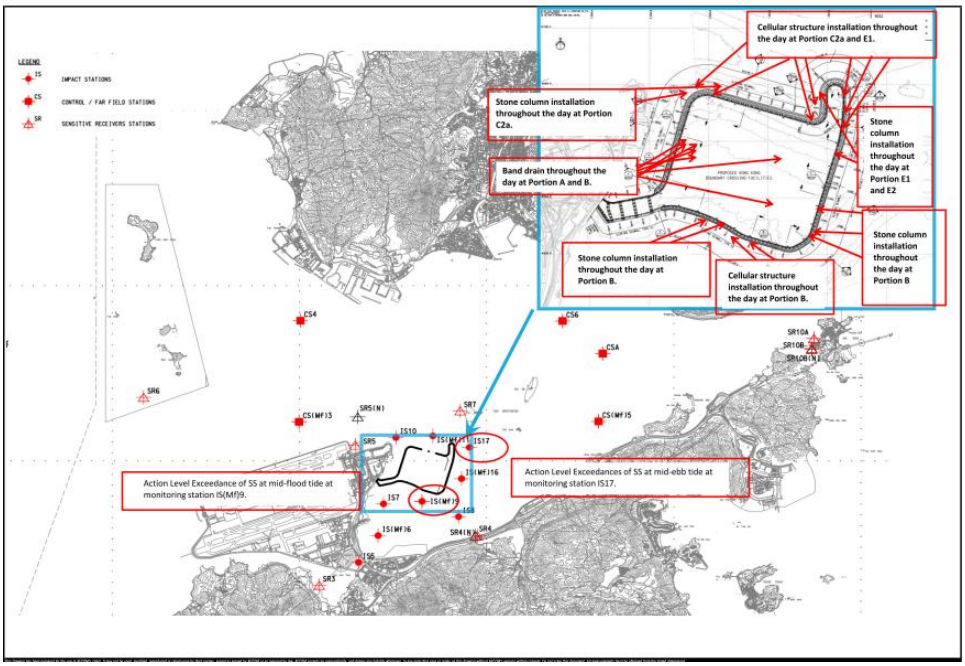
3.3.16.5 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

3.3.16.6 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.16.7 Photo record of the sea condition taken on 13 Nov 13

Condition of silt curtain near the monitoring station SR4(N).

3.3.17 Two (2) action level exceedance of SS was recorded on 15 Nov 13 at monitoring station IS17 during ebb tide and IS(Mf)9 during flood tide. SS level of 26 mg/L and 26.3 mg/L were recorded for station IS17 during ebb tide and IS(Mf)9 during flood tide respectively.



3.3.17.1 Please refer the below layout map for activity carried out on 15 Nov 13.

3.3.17.2 Turbidity level (NTU) results recorded on 15 Nov 13 at IS17 during ebb tide and IS(Mf)9 during flood tide is 23.4 NTU and 20.4 NTU respectively which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 15 Nov 13.)

3.3.17.3 Almost the same type of works at the same locations were carried out at the same location on 13, 15 and 18 Nov 13 but Suspended Solids values recorded at IS17 and IS(Mf)9 on 13 and 18 Nov 13 are all below the Action and Limit Level during the same tide on the same day which indicates active works is unlikely to adversely affect the water quality at IS17 and IS(Mf)9.

3.3.17.4 The recorded suspended solids values recorded on 15 Nov 13 at monitoring station IS(Mf)11, SR7, IS(Mf)16 during ebb tide were below the action and limit level which shows that the water quality nearby IS17 during the monitoring period were not adversely affected.

3.3.17.5 The recorded suspended solids values recorded on 15 Nov 13 at monitoring station IS(Mf)16, IS8 and IS7 during mid flood tide were below the action and limit level which shows that the water quality nearby IS(Mf)9 during the monitoring period were not adversely affected.

3.3.17.6 Refer to the attached layout map, active works were noted directly upstream to IS(Mf)9 during flood tide and IS17 during ebb tide, but no defects at south aligment (Nearby IS(Mf)9 and the northwest aligment of the perimeter silt curtain (nearby SI17) when monitoring was conducted on 15 Nov 13.

3.3.17.7 The exceedances were likely due to local effects in the vicinity of IS17 and IS(Mf)9.

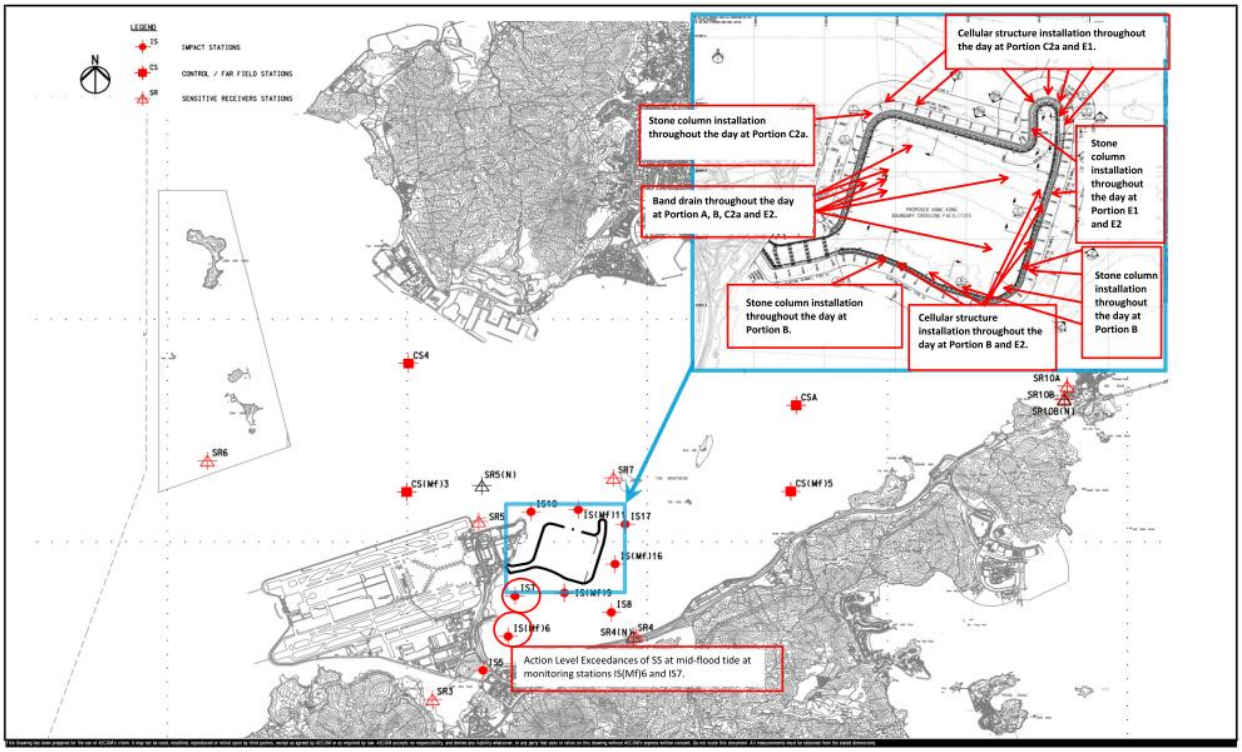
3.3.17.8 The exceedances were considered as Non-project related

3.3.17.9 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.

3.3.17.10 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.17.11 Photo record of the sea condition taken on 15 Nov 13

3.3.18 Two (2) Action level exceedance of SS was recorded on 20 Nov 13 at monitoring station IS(Mf)6 and IS7 during mid flood tide. SS level of 31.5mg/L and 23.7mg/L was recorded for IS(Mf)6 and IS7 respectively.



3.3.18.1 Please refer attached Layout Maps for work activity carried out on 20 Nov 13.

3.3.18.2 Turbidity level (NTU) results recorded on 20 Nov 13 at IS(Mf)6 and IS7 during flood tide is 24.5 NTU and 8.7 NTU respectively which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 20 Nov 13.)

3.3.18.3 IS(Mf)9 is located closer to the active works than monitoring stations IS(Mf)6 and IS7. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 was below the Action and Limit Level which indicates that the water quality nearby IS(Mf)6 and IS7 during the monitoring period were not adversely affected.

3.3.18.4 Almost the same type of works at the same locations were carried out at the same location on 18 and 22 Nov 13 but Suspended Solids values recorded at IS(Mf)6 and IS7 on 18 and 22 Nov 13 are all below the Action and Limit Level during the same tide on the same day which indicates active works is unlikely to adversely affect the water quality at IS(Mf)6 and IS7.

3.3.18.5 Refer to the attached layout map, active works were noted directly upstream to IS(Mf)6 and IS7 during flood tide, but no defects at the northwest alignment of the perimeter silt curtain (nearby SI(Mf)11) when monitoring was conducted on 20 Nov 13.

3.3.18.6 No defects of perimeter silt curtain was observed at the proximity of IS(Mf)6 and IS7. (Please refer to the photo record attached)

3.3.18.7 Condition of silt curtain near the monitoring station IS(Mf)6 and IS7.

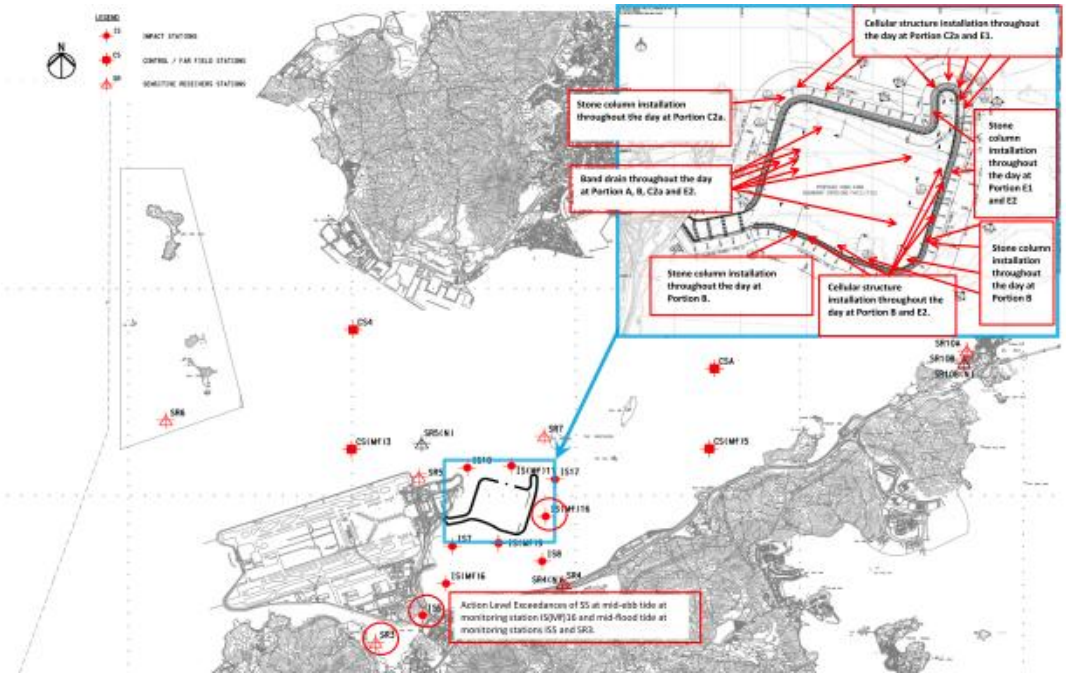
3.3.18.8 The exceedances were likely due to local effects in the vicinity of IS(Mf)6 and IS7.

3.3.18.9 The exceedances were considered as Non-project related

3.3.18.10 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.

3.3.18.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday

3.3.19 Three (3) Action level exceedance of SS was recorded on 22 Nov 13 at monitoring station IS(Mf)6 during mid-ebb tide, IS5 and SR3 during mid-flood tide. SS level of 30mg/L at monitoring station IS(Mf)6 during mid-ebb tide was recorded and 24.6mg/L and 23.7mg/L were recorded for IS5 and SR3 respectively during mid flood tide



3.3.19.1 Please refer attached Layout Maps for work activity carried out on 22 Nov 13.

During Mid-ebb tide:

3.3.19.2 Turbidity level (NTU) results recorded on 22 Nov 13 at IS(Mf)16 during ebb tide is 22.5 NTU which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 22 Nov 13.)

3.3.19.3 IS17 and IS(Mf)11 which are located closer to the active works than monitoring stations IS(Mf)16. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the ebb tide on the same day at IS17 and IS(Mf)11 were below the Action and Limit Level which indicates that the water quality nearby IS(Mf)16 during the monitoring period were not adversely affected.

3.3.19.4 Almost the same type of works at the same locations were carried out at the same location on 18, 20 and 22 Nov 13 but Suspended Solids values recorded at IS(Mf)16 on 18, 20 and 22 Nov 13 are all below the Action and Limit Level during the same tide on the same day which indicates active works is unlikely to adversely affect the water quality at IS(Mf)16.

3.3.19.5 Localised silt curtain was implemented during stone column installation.

3.3.19.6 No defects of perimeter silt curtain was observed at the proximity of IS(Mf)16. (Please refer to the photo record attached)


2013/11/22


2013/11/22

During Mid-flood tide:

3.3.19.7 Turbidity level (NTU) results recorded on 22 Nov 13 at IS5 and SR3 during flood tide is 15.7 NTU and 18.7 NTU respectively which were below the Action and Limit Level, this indicates turbidity level was not adversely affected. (Please see attached photo record of the sea condition taken on 22 Nov 13.)

3.3.19.8 IS(Mf)9 and IS7 are located closer to the active works than monitoring stations IS5 and SR3. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 and IS7 were below the Action and Limit Level which indicates project works is unlikely to contribute to the action level exceedance recorded at IS5 and SR3.

3.3.19.9 The monitoring location of monitoring stations IS5 and SR3 are considered upstream to the active works of this project during flood tide. Therefore it was unlikely that the exceedances recorded at IS5 and SR3 were due to active construction activities of this project.

3.3.19.10 The exceedances were likely due to local effects in the vicinity of IS(Mf)16, IS5 and SR3.

3.3.19.11 The exceedances were considered as Non-project related

3.3.19.12 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.

3.3.19.13 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday

3.3.20 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 Sept 2013- Nov 2013

Number of Impact Surveys Completed^	6
Survey Distance Travelled under Favourable On- Effort Condition	665.9km
Number of Sightings	42 sightings (28 sightings are ”on effort” (which are all under favourable condition), 14 “sightings are opportunistic”)
Number of dolphin individual sighted	133 individuals (the best estimated group size)
Dolphin Encounter Rate#	NEL: 0 NWL:6.3
Dolphin Group Size	Average of 3.2 Varied from 1-12 individuals
Most Often frequent dolphin sighting area	Sha Chau and Lung Kwu Chau Marine Park.

Remarks:
^ Completion of line transect survey of NEL and NWL survey area once was counted as one complete survey.
# Dolphin Encounter Rate = (Sum of 1^{st} 2^{nd}, 3^{rd} month’s total sighting/ Sum of 1^{st}, 2^{nd}, 3^{rd} month’s total effort)*100km (encounter rates are calculated using on effort sightings made under favourable conditions only.)

3.4.5 Two (2) Action Level exceedances of dolphin monitoring were recorded in the reporting quarter. The investigation results showed that although no unacceptable changes in environmental parameters of this project have been measured, at this time it is not possible to make a conclusive assessment of this Project’s specific impact on dolphins. The investigation results are annexed in Appendix L. Actions were taken according to the Event and Action Plan for impact dolphin monitoring. Please refer to Appendix L for details of action taken. Table 3.7 below shows the Summary of STG and ANI encounter rates in Sept 2013- Nov 2013**.**

Table 3.7 Summary of STG and ANI encounter rates in Sept 2013- Nov 2013

	NEL	NWL	Level Exceeded
STG*	0.00	6.7	Action
ANI**	0.00	24.7	Action

*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.

3.4.7 Single parameter analyses are unable to detect impact as the influence of additional and co-correlated factors are not accounted for. As such, a multi-parameter model was proposed and reviewed by management authorities. This analysis is currently underway and shall be reported in full in a separate report immediately in its completion.

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 Stockpile of sand was observed entire surface wet at WA2. The Contractor was reminded that stockpile of aggregate or dusty materials shall be sprayed with water so as to maintain the entire surface wet; or covered entirely by impervious sheeting or placed in sheltered areas to mitigate potential fugitive dust emission. (Reminder)

3.5.4 Side curtain attached to the tipping point of a conveyor belt on a filling barge was provided to filling barge but was observed not fully enclosed. The Contractor was reminded to provide a fully enclosed side curtain for filling activities. (Reminder)

3.5.5 Sand surface was observed during inspection at works area at Portion A. The Contractor provided dust control to the areas with sand surface. The Contractor was reminded to continue the provision of dust control measures to the areas with sand surface. (Reminder)

3.5.6 Dark smoke was observed emitted on barges when sand material was being transferred to another barge. The Contractor was reminded to rectify the situation such as to maintain their equipments in good condition to prevent emission of dark smoke. The Contractor maintained their equipments in good condition to prevent emission of dark smoke. (Closed)

3.5.7 Bags of cement was observed not entirely covered by impervious sheeting, the Contractor was reminded to keep the bags of cement covered entirely by impervious sheeting. The Contractor rectified the situation and kept the bags of cement covered entirely by impervious sheeting. (Closed)

Noise

3.5.8 Some plants mounted on construction vessels were observed acoustically-decoupled, but a generator was still observed not totally acoustically-decoupled on barge Shang Ho Bo 601. The Contractor was advised to continue to provision of enhancement works i.e. to provide sufficient acoustic decoupling measure(s) such as acoustic mat to noisy equipments. The Contractor was reminded that insufficient/inadequate mitigation measures must be swiftly rectified. (Reminder)

3.5.9 A Generator was observed without sufficient decoupling measures on barge Fai Yu 3228. The Contractor provided sufficient acoustic decoupling measures to generator on Fai Yu 3228. (Closed)

3.5.10 Noise Emission Label (NEL) of an air compressor was observed missing. The Contractor was reminded to properly display the NEL on all Compressors. The Contractor properly display the NEL the Compressors observed on Kiu Chi. (Closed)

Chinese White Dolphin

3.5.11 No adverse observation was identified in the reporting month.

Water Quality

3.5.12 Oil drum was observed improperly stored on barge SHB401, on rock bund, works area at Portion A, on an area outside Contractor's site office, the Contractor was reminded to provide mitigation measures such as bunding or drip tray to all oil drums. The Contractor removed the oil drums from area without bunding or drip tray. (Closed)

3.5.13 Open holes were observed within the drum of the bunding on barge SHB401, on Barge Fai Yu 3228, on barge AP4, on barge Evershine 668, on barge Yat Fai, at works area of portion A and on temporary rock bund. The Contractor was reminded to provide effective mitigation measures such as to seal the holes properly to prevent potential leakage and runoff. The Contractor provided effective mitigation measures such as to fix the defects properly to prevent potential leakage and runoff. (Closed)

3.5.14 It was observed that the frame of a trip tray on barge Shang Ho Bo 601 was insufficient. The Contractor was reminded to provide effective mitigation measures such as drip tray/bunding with sufficient height to contain waste drums. The Contractor provided drip tray/bunding with sufficient space to contain waste drums. (Closed)

3.5.15 It was observed that the frame of a trip tray on barge Fai Yu 3228 was damaged. The Contractor was reminded to provide effective mitigation measures such as drip tray with sufficient height to contain equipments. (Closed)

3.5.16 Machine and generator were observed without drip tray/tarpaulin sheet underneath at rock bund and works area at Portion A and on steel cell. The Contractor was reminded to provide mitigation measures to prevent potential surface runoff. The Contractor rectified the situation by placing tarpaulin sheet underneath the machine and sand bag was used to surround the machine. (Closed)

3.5.17 A new generator was observed without drip tray on cellular structure. The Contractor was reminded to provide mitigation measures such as drip tray to this generator before operation of this generator. (Reminder)

3.5.18 Temporary mitigation measure was provided to idle generation on barge Fai Yu 3228 but the Contractor was reminded to provide mitigation measures such as drip tray or bunding to prevent potential oil leakage and surface runoff. The generator was provided with built-in drip tray. (Closed)

3.5.19 Silt plum was observed flowed from the inside of the localized silt curtain on barge Sun Moon Kee. The Contractor rectified the defects of the localized silt curtain. (Closed)

3.5.20 A fuel tank which is not in use was observed without drip tray or bunding. The Contractor was reminded to provide mitigation measures such as drip tray or bunding to fuel tank before use. (Reminder)

3.5.21 Oil stain was observed on barge Yat Fat and on barge Kiu Chiu. The Contractor was reminded to clear the oil stain using oil absorbent material and dispose the absorbent as chemical waste. The Contractor cleared the oil stain observed on barge Yat Fat. (Closed)

3.5.22 Barges were observed without sufficient enclosed side curtain. The Contractor was reminded to provide barges for delivering sand material with sufficient enclosed side curtain. The Contractor was reminded to provide barges for delivering sand material with enclosed side curtain. (Closed)

3.5.23 Turbid water was observed at the southwestern silt curtain entrance area. Refer to the photo taken and site observations, sources of impact likely due to the turbine activities and/or movement of vessel at shallow water (at near the entrance at southwestern of the Construction site and/or when vessel's propeller was turn on at shallow water). The dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain is potentially due to defects of perimeter silt curtain at certain sections and/or insufficient overlapping at entrance/exit of the perimeter silt curtain. The Contractor was advised to regularly evaluate the integrity of the perimeter silt curtain by reviewing the results obtained from daily checking or/and monthly diver inspections specified by the Silt Curtain Deployment Plan. The Contractor was advised to provide sufficient mitigation measures and swiftly carry out maintenance once defects of the perimeter silt curtain are found during the above mentioned daily checking and/or monthly diver inspection. The Contractor was provided mitigation measures and carried out maintenance above mentioned defects of the perimeter silt curtain are found. (Closed)

Chemical and Waste Management

Waste

3.5.24 Bags of waste were observed accumulated on barge Four Sea 8, barge Hing Fai, barge AP4 and various locations on a works area at Portion A. The Contractor was reminded to clear the waste regularly to prevent accumulation. (Reminder)

3.5.25 Litter and general refuse was observed accumulated on sea the Contractor was reminded to avoid/clear any foam, oil, grease, chemicals, litter, food or other objectionable matter due to the Project works presented in the water within and adjacent to the works site. The Contractor avoided any foam, oil, grease, chemicals, litter, food or other objectionable matter due to the Project works presented in the water within and adjacent to the works site. The Contractor was reminded to collect and clear the waste on sea regularly. (Closed)

3.5.26 General refuse were found on various location of the works area at Portion A. The Contractor was reminded to clear the general refuse regularly. The Contractor was reminded to maintain the site in a clean and tidy condition i.e. to properly store the general refuse at designated waste storage area(s). The Contractor cleared the general maintain the site in a clean and tidy condition. (Closed)

Landscape and Visual Impact

3.5.27 No relevant works was carried out in the reporting Quarter.

Others

3.5.28 The Contractor was reminded to properly display relevant Environmental Permit at an appropriate location i.e. near entrance on barge Kam Shun 368, so that it may be easily noticed. (Reminder)

3.5.29 Water was observed accumulate inside car tyre on barge Yat Fat. The Contractor was reminded to keep the site clean and tidy and clear the water accumulated inside car to prevent mosquito breeding. The Contractor rectified the situation by clearing the car tyre on barge Yat Fat. (Closed)

3.5.30 The Contractor had 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.

3.5.31 The Contractor had 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, 2,162,636.3 m^3 of fill were imported for the Project use in the reporting period. 1.792 tonnes of paper/ carboard packaging and 1.4 tonnes of metal were generated, 1.2 tonnes of chemical waste and 78 m^3 of general refuse were generated and disposed of in the reporting period. Monthly summary of waste flow table is detailed in Appendix M.

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.

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 results were below the Action and Limit Level in the reporting Quarter. Five (5) 24-hour TSP results recorded at AMS3A exceeded the Action Level and one (1) 24-hour TSP results recorded at AMS3A exceeded the Limit Level in the reporting Quarter. Investigation results show that the exceedances were not related to Project.

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

6.1.3 Twenty eight (28) Action Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting Quarter. (2) Limit Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter. Investigation results show that the exceedances were not related to Project.

6.1.4 Two (2) Action Level exceedances were recorded in the reporting quarter. The investigation results showed that although no unacceptable changes in environmental parameters of this project have been measured, at this time it is not possible to make a conclusive assessment of this Project's specific impact on dolphins.

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

6.1.6 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 One (1) complaint was logged by the Contractor regarding the leakage from work barges causing water pollution near Tuen Mun Richland Garden received on 26 Sept 13.

7.1.2.1 The complaint reported in the EM&A report (Sept 13) regarding the leakage from work barges causing water pollution near Tuen Mun Richland Garden was followed up and replied by Highway Department to Oriental Daily Newspaper and it is noted that all project related vessels (including sand barges) are designated with a regular marine travel route to the site, but the regular travel route plan of this project does not specify the travel route passing through the Tuen Mun Butterfly Beach area. Information shown that all sand barges will not conduct sand filling activities at area outside HKBCF site boundary and all vessels have regular maintenance to ensure that all Sand Barge functioning well.

7.1.2.2 With refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

7.1.2.3 The Contractor was advised to ensure the regular travel routes for all project related vessels (including sand barges) shall be strictly followed, all sand barges do not conduct sand filling activities at area outside HKBCF site boundary and all vessels have regular maintenance to ensure that all Sand Barge functioning well.

7.1.3 As informed by the Contractor on 5 Nov 13, 1 (one) a noise complaint received on 14 Sept 13 was referred to the Contractor of HKBCF on 1 Nov 13. The captioned complaint involves noise generated by a tug boat operating near a pier at Tung Chung around 05:55am-06:45am on 14 Sept 13.

7.1.3.1 In respect of the concern incident, the Contractor of HKBCF confirmed that the tug boat showed in photographs provided does not belong to this project. Site daily records were provided by the Contractor and the site daily records show that no tug boat was in operation before 09:00 on 14 Sept 13. As a result, the noise complaint was considered as non-project related

7.1.3.2 The Contractor was advised to notice all captains of the boats of this Contract to be aware of the captioned noise incident and to avoid the occurrence of the captioned situation.

7.1.4 One (1) complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern.

7.1.4.1 With refer to the given photo, there are no sufficient details or features could be found on the anchored vessels that confirmed they are project vessels (lack of names and vessel number); it cannot be conclude that the concerned vessels shown in the photos belong to this Contract. The complaint is therefore considered not likely to be related to the construction works.

7.1.4.2 The Contractor was advised to notice all captains of the boats of this Contract to be aware of the captioned incident and to avoid the anchoring of vessels within the concerned area. Further to the captioned complaint on 22/11/2013, The Contractor had followed up with the case about their vessels berthing within the boundary of CMP1 of SB thereafter, causing disruption to the underlying

contaminated mud and induces contamination impact to the surrounding marine environment. In respect of the concern situation, all captains of the vessels were reminded to avoid anchor in the captioned area immediately.

7.1.5 One (1) follow up enquiry of the same issue mentioned in a complaint reported in the EM&A report (Sept 13) was logged by the Contractor on 9 Oct 2013. The enquirer expressed concern of the leakage from work barges causing water pollution at sea near Tuen Mun Richland Garden and the impact of fishery activities.

7.1.5.1 The complaint reported in the EM&A report (Sept 13) regarding the leakage from work barges causing water pollution near Tuen Mun Richland Garden was followed up and information shown that all project related vessels (including sand barges) are designated with a regular marine travel route to the site, but the regular travel route plan of this project does not specify the travel route passing through the Tuen Mun Butterfly Beach area.

7.1.5.2 Information shown that all sand barges will not conduct sand filling activities at area outside HKBCF site boundary and all vessels have regular maintenance to ensure that all Sand Barge functioning well.

7.1.5.3 Although with refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

7.1.5.4 The Contractor was advised to ensure the regular travel routes for all project related vessels (including sand barges) shall be strictly followed, all sand barges do not conduct sand filling activities at area outside HKBCF site boundary and all vessels have regular maintenance to ensure that all Sand Barge functioning well.

7.1.6 No notification of summons and successful prosecution was received in the reporting period.

7.1.7 No environmental notification of Summons and Successful Prosecutions was received in the reporting quarter.

7.1.8 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.
- 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 results were below the Action and Limit Level in the reporting quarter. Five (5) 24-hour TSP results recorded at AMS3A exceeded the Action Level and one (1) 24-hour TSP results recorded at AMS3A exceeded the Limit Level in the reporting quarter. Investigation results show that the exceedances were not related to Project.

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

8.3.4 Twenty eight (28) Action Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter. (2) Limit Level exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting quarter.

8.3.5 Two (2) Action Level exceedances of dolphin monitoring were recorded in the reporting quarter. The investigation results showed that although no unacceptable changes in environmental parameters of this project have been measured, at this time it is not possible to make a conclusive assessment of this Project's specific impact on dolphins.

8.3.6 Environmental site inspection was carried out thirteen 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 One (1) complaint was logged by the Contractor regarding the leakage from work barges causing water pollution near Tuen Mun Richland Garden received on 26 Sept 13. With refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

8.3.8 As informed by the Contractor on 5 Nov 13, one (1) noise complaint received on 14 Sept 13 was referred to the Contractor of HKBCF on 1 Nov 13. After investigation, the noise complaint was considered as non-project related.

8.3.9 One (1) complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern. After investigation, the complaint is considered not likely to be related to the construction works.

8.3.10 One (1) follow up enquiry of the same issue mentioned in a complaint reported in the EM&A report (Sept 13) was logged by the Contractor on 9 Oct 2013. The enquirer expressed concern of the leakage from work barges causing water pollution at sea near Tuen Mun Richland Garden and the impact of fishery activities. Although with refer to the available information such as photo record of the incident cannot indicate that the leakage from work barges was caused by the vessel of this Contract and the complaint could not be concluded as project related.

8.3.11 No notification of summons and successful prosecution was received in the reporting period.

8.3.12 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.

8.3.13 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.

8.3.14 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.