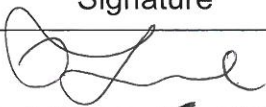



China State Construction Engineering (Hong Kong) Ltd.

Contract No. CV/2007/03

**Development at Anderson Road –
Site Formation and Associated
Infrastructure Works****Quarterly EM&A Summary Report for
December 2012 – February 2013**

April 2013

	Name	Signature
Prepared & Checked:	Isabella Yeung	
Reviewed, Approved & Certified:	Edith Ng (ETL)	

Version: 0

Date: 14 April 2013

Disclaimer

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Ref.: OAPANDSNEM00_0_1012L.13

23 April 2013

By Fax (3656 3100 / 2407 8382) and Post

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

Attention: Mr. Dennis Leung

Dear Sir,

**Re: Contract No. CV/2007/03 (Environmental Permit No. EP -140/2002)
Development at Anderson Road
Site Formation and Associated Infrastructure Works
Quarterly EM&A Report for December 2012 to February 2013**

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for December 2012 to February 2013 received by E-mail on 16 April 2013 and the subsequent revision by E-mail on 23 April 2013.

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



David Yeung
Independent Environmental Checker

c.c. AECOM Attn: Ms. Edith Ng
CSCEC Attn: Mr. Wilson Lau

Fax: 2891 0305
Fax: 2702 6553

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EXECUTIVE SUMMARY

The Project “Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”) is proposed to form platforms for housing development and associated uses in area of about 20 hectares, and to carry out necessary infrastructural upgrading or improvement works to cater for the proposed development.

China State Construction Engineering (Hong Kong) Limited (CSCE) was commissioned as the Contractor of the Project. AECOM Asia Co. Ltd. (AECOM) was employed by CSCE as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project.

The impact EM&A for the Project includes air quality and noise monitoring. The EM&A programme for Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) commenced on 1 May 2008, while for Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2) and Sau Nga House (ID 3) commenced on 1 June 2008.

The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

The construction for the Widening of Po Lam Road (Schedule 2 DP) project was commenced in this reporting period, i.e. on 21 September 2011.

This report documents the findings of EM&A works for ID 1A, ID 2, ID 3, ID 4 and ID 5 conducted in the period from 1 December 2012 to 28 February 2013. As informed by the Contractor, construction activities in the reporting quarter were:

- Blasting;
- Drainage works;
- Slope upgrading works;
- Excavation work at Portions A, B, C, D, E, H, J4, S1a, S2a, S2b;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road, Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access and temporary drainage;
- Slope stabilization;
- Tree transplanting and protection;
- Maintenance works;
- Bridge structural works;
- Retaining structures structural works;
- RE wall panel installation;
- Slope drainage and maintenance access;
- Erection and maintenance of blasting cages and fencing;
- Pre-stressing works of bridge;
- Toe / Beam planter construction;
- Permanent backfilling at RW22;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of bored pile at R15;
- Construction of Bridge A, B and D;
- U-channel and box-culvert works at Portion D and E; and
- Preparation works for area J1a and J1b (R15b)

Environmental Monitoring Works

EM&A Programme

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

24-hour TSP monitoring	15 sessions
1-hour TSP monitoring	45 sessions
Daytime Noise monitoring	13 sessions
Environmental Site Inspection	13 sessions

Breaches of Action and Limit Levels

No exceedance of Action and Limit Level was recorded for 1-hour TSP and 24-hour TSP monitoring in the reporting quarter.

According to the information provided by the Contractor, one (1) Action Level exceedance was recorded since one (1) noise related complaint was received in the reporting quarter.

No exceedance Limit Level of noise was recorded in the reporting quarter.

Complaint, Notification of Summons and Successful Prosecution

According to the information provided by the Contractor, one (1) water related complaint, two (2) air related complaints and one (1) noise related complaint were received in December 2012. No notification of summons and successful prosecution were received in the reporting quarter.

- A complaint was referred by CEDD (ICC) regarding the muddy water impact along the road at New Clear Water Bay Road on 4 December 2012.

Muddy water was potentially contributed from the rainwater and dust which carried by vehicles passing the haul roads at Portion J2. Water spraying has been carried out by workers to clean the carriageway and no muddy water was observed.

The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility. Moreover, regular water spraying was also recommended to clean the carriageway along New Clear Water Bay Road.

No further complaint was received and the complaint was closed

- CEDD(ICC) referred a complaint about dust nuisance along the road at Clear Water Bay Road near Anderson Road crossing on 6 and 11 December 2012.

Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2. Water spraying has been carried out by water truck twice daily to minimize fugitive emission generated.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 5 and 11 December 2012, the measured 24-hour TSP level was found to be $25.4\mu\text{g}/\text{m}^3$ and $81.2\mu\text{g}/\text{m}^3$ respectively. The measured 1-hour TSP levels on 5 and 11 December 2012 were found to be $78.4\mu\text{g}/\text{m}^3$; $82.1\mu\text{g}/\text{m}^3$; $80.6\mu\text{g}/\text{m}^3$ and $78.4\mu\text{g}/\text{m}^3$; $80.2\mu\text{g}/\text{m}^3$; $77.9\mu\text{g}/\text{m}^3$ respectively. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility.

No further complaint was received and the complaint was closed.

- A complaint was sent to CSCE regarding the construction noise impact in Portion R15 on 13 December 2012.

According to the noise monitoring data recorded on 11 and 17 December 2012 at the nearest monitoring station ID5 (Sau Mau Ping Catholic Primary School), the measured noise level in Leq (30-min) were 64.7dB(A) and 64.6dB(A) respectively, which were below the Limit Level.

Noise mitigation measures have been provided at works area R15 to mitigate the noise impacts which included erection of noise barriers and provide acoustic wrappings to the breaking tips of hydraulic breakers worked at the works area for the sides facing the noise sensitive receivers.

Construction noise was potentially contributed by rock breaking activities at retaining wall at R15b of the Project.

The Contractor agreed to start the works after 9 a.m., strictly implement the noise mitigation measures and ensure the effectiveness of noise mitigation measures deployed within works area should be reviewed onsite regularly in order to provide sufficient noise screening effect properly for the NSRs.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A report (December 2012 Version 0) accordingly for the details of the captioned complaint.

1 INTRODUCTION

1.1 Scope of Report

1.1.1 This is the quarterly Environmental Monitoring and Audit (EM&A) Report for the reporting period from 1 December 2012 to 28 February 2013 under the Project “Contract CV/2007/03 - Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”), which serving for both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project (which was commenced on 21 September 2011).

1.1.2 This report presents a summary of the EM&A works, list of activities and mitigation measures proposed by the Environmental Team (ET) for the Project during the reporting period.

1.2 Project Organization

1.2.1 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
ER (Ove Arup)	Chief Resident Engineer	Dennis Leung	3656 3000	3656 3100
	Senior Resident Engineer	Michael Wright	3656 3000	3656 3100
	Resident Engineer (Safety and Environmental)	Kenneth Lee	3656 3000	3656 3100
IEC (ENVIRON)	Independent Environmental Checker	David Yeung	3465 2888	3465 2899
Contractor (CSCE)	Site Agent	Wilson Lau	2704 2095	2702 6553
	Environmental Manager	Leo Chung	2704 2095	2702 6553
ET (AECOM)	ET Leader	Edith Ng	3922 9407	2317 7609

1.3 Summary of Construction Works

1.3.1 The Contactor has carried out major activities in the reporting quarter. Details of the works undertaken in this reporting period are listed below:

- Blasting;
- Drainage works;
- Slope upgrading works;
- Excavation work at Portions A, B, C, D, E, H, J4, S1a, S2a, S2b;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road, Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access and temporary drainage;
- Slope stabilization;
- Tree transplanting and protection;
- Maintenance works;
- Bridge structural works;
- Retaining structures structural works;
- RE wall panel installation;
- Slope drainage and maintenance access;
- Erection and maintenance of blasting cages and fencing;
- Pre-stressing works of bridge;
- Toe / Beam planter construction;
- Permanent backfilling at RW22;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of bored pile at R15;
- Construction of Bridge A, B and D;
- U-channel and box-culvert works at Portion D and E; and
- Preparation works for area J1a and J1b (R15b)

1.3.2 The general layout plan of the Project site showing the contract area is shown in Figure 1.1.

1.3.3 The environmental mitigation measures implementation schedule (EMIS) are presented in Appendix B.

2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

2.1 Monitoring Parameters

- 2.1.1 The EM&A Manual designated five monitoring stations to monitor environmental impacts on air quality and noise due to the Project. The monitoring locations are depicted in Figure 2.1.
- 2.1.2 The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

2.2 Environmental Quality Performance Limits (Action/Limit Levels)

- 2.2.1 The environmental quality performance limits (i.e. Action/Limit Levels) were derived from the baseline air quality and noise monitoring results of Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2), Sau Nga House (ID 3), Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) and / or as defined in the EM&A Manual for air quality and noise impacts.
- 2.2.2 The baseline condition of air quality (for ID 1A, ID 2 & ID 3) in the Project site was reviewed in August 2008 upon agreed by ER and IEC. Reviewed Action Levels for air quality at ID 1A, ID 2 and ID 3 were established in September 2008. The latest Action and Limit Levels (established in September 2008) for all monitoring parameters are summarized in Appendix C.

2.3 Environmental Mitigation Measures

- 2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (No.: EP-140/2002) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix B.

3 MONITORING RESULTS

3.1 Air Quality

- 3.1.1 Air quality monitoring, including 1-hr and 24-hr TSP, was conducted for at least three times every 6 days and for at least once every 6 days respectively at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5), in accordance with the EM&A Manual.
- 3.1.2 Forty-five (45) sessions of 1-hr TSP monitoring and fifteen (15) sessions of 24-hr TSP monitoring were conducted for the 5 monitoring stations (ID 1A, ID 2, ID 3, ID4 & ID5) in the reporting quarter.
- 3.1.3 The weather was mostly sunny, with occasionally cloudy period in the reporting quarter. The trend of impact air quality monitoring results for the reporting quarter is given in Appendix D. Major dust source included construction activities of the Project, concurrent construction activities of another project carried out in the vicinity and nearby traffic emissions.
- 3.1.4 No exceedance of Action and Limit Level was recorded for 1-hour TSP and 24-hour TSP monitoring in the reporting quarter.
- 3.1.5 Table 3.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular impact monitoring events and additional ones, if any.

Table 3.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Concentration

Monitoring Parameter	Location	Level of Exceedance	Month			
			Dec 12	Jan 13	Feb 13	
1-hr TSP	ID 1A	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 2	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 3	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 4	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 5	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	Total			0	0	0
	24-hr TSP	ID 1A	No. of monitoring events	5	5	5
			Action	0	0	0
			Limit	0	0	0
		ID 2	No. of monitoring events	5	5	5
			Action	0	0	0
Limit			0	0	0	
ID 3		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
ID 4		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
ID 5		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
Total			0	0	0	

3.2 Construction Noise

- 3.2.1 Noise was conducted at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5) for at least once per week during the construction phase (0700 – 1900) of the Project.
- 3.2.2 Thirteen (13) noise monitoring events were carried out for all monitoring stations in the reporting quarter.
- 3.2.3 According to the information provided by the Contractor, one (1) noise complaint was received in the reporting quarter; hence, one (1) Action Level exceedance was received in the reporting quarter.
- 3.2.4 No Limit Level exceedance of noise was recorded in the reporting quarter.
- 3.2.5 The graphical plots of trends of the noise monitoring results in the reporting quarter are provided in Appendix E. Major noise source included construction activities of the Project, concurrent construction activities of another project carried out in the vicinity, nearby traffic emissions and noise from school activities and community noise.
- 3.2.6 Table 3.2 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular monitoring events and additional ones, if any.

Table 3.2 Summary of Number of Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Month			
			Dec 12	Jan 13	Feb 13	
Construction Noise	ID 1A	No. of monitoring events	4	4	5	
		Limit	0	0	0	
	ID 2	No. of monitoring events	4	4	5	
		Limit	0	0	0	
	ID 3	No. of monitoring events	4	4	5	
		Limit	0	0	0	
	ID 4	No. of monitoring events	4	4	5	
		Limit	0	0	0	
	ID 5	No. of monitoring events	4	4	5	
		Limit	0	0	0	
	Total Action Level*			1	0	0
	Total Limit Level			0	0	0

Remarks: * Number of Action Level exceedance for construction noise is the number of documented noise related complaint received in the reporting period from any one of the sensitive receivers.

3.3 Environmental Site Inspection

3.3.1 There were 13 site inspections conducted in the reporting quarter to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The major concerns for the Project are air quality, noise, water quality and chemical and waste management. Particular observations and non-compliance and their statuses are described below.

3.3.2 The Contractor has rectified most of the observations as identified during environmental site inspection in the reporting period within agreed time frame. 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.

3.3.3 Air Quality Impact

- Fugitive dust emission was observed due to inadequate dust control measures for rock breaking in works area at Portion C2. The Contractor should provide regular water spray to the works area to minimize fugitive dust emission generated.
- Tarpaulin sheet on the stockpile material in Portion C2 were covered incompletely. The Contractor should cover up the exposed slope completely to minimize the dust impact.
- Shelter provided at soil nailing area in works area R16a and C2a were found improper. The Contractor should provide shelter with proper coverage on the top and at the 3 sides for soil nailing area to minimize fugitive dust emission generated.
- The non-compliance issued by IEC regarding inadequate wheel washing facilities observed during site inspection on 31 January 2013. Mud trails were observed at the site entrances/exits in Gate No. 6. Ineffective wheel washing facilities were found at these site entrances/exits. The Contractor should review and maintain the wheel washing facilities provided at works area regularly to ensure the deposited silt on vehicles' wheels and bodies was washed off effectively. Mud trails on the paved roads should be cleared.
- Dark smoke emission was observed from a breaker in Portion A and C2a. The Contractor should repair the breaker and conduct regular inspection of the working machineries worked in site areas to avoid any dark smoke emission.

3.3.4 Construction Noise Impact

- Noise mitigation measures provided at the breaking tip of the breaker worked at works area in Portion C2a (next to Tung Lee's workshop) was found improper. The Contractor should provide appropriate noise insulating material to the breaker's breaking tips to minimize the noise impacts to the sensitive receivers nearby.

3.3.5 Water Quality Impact

- Slurry was observed at the works area throughout the site. The Contractor was recommended to provide adequate desilting facility and divert the slurry to desilting facility as soon as possible to ensure the slurry was removed timely.
- Silty surface run-off was found discharging into the box culvert next to the temple located below Portion F. The Contractor should review the temporary drainage channels/systems provided in the Project site regularly. Surface run-off from works area should be properly treated with desilting facilities prior to discharge.
- Stagnant water was found outside the site office entrance/exit. The Contractor was reminded to clear the stagnant water regularly.

3.3.6 Chemical and Waste Management

- Machinery maintenance works in improper works area was observed outside Tung Li workshop in Portion C2. The Contractor should ensure that maintenance works are carried out in roofed, paved and confined works area only.
- Oil drums, chemical containers and air compressors were stored in works area outside Tung Li workshop in Portion C2, at Portion A1, Portion 15b, Road L4, Portion R25b, C2a, Branch M, Bridge A and Footbridge C without the provision of drip tray. The Contractor should provide drip tray or equivalent measure to the oil drums and chemical containers to retain leakage, if there is any.
- Chemical containers, recyclable wastes and construction wastes were mixed together in the waste skip located at Portion R25b, Portion A1, Road L4, Portion R16, Portion S1c and Sau Fung Street. The Contractor was reminded to implement on-site sorting properly, i.e. recycle wastes whenever possible and dispose containers as chemical waste accordingly.
- Accumulation of stagnant water and slurry were observed in drip trays which placed in works area at Portion R15. The Contractor was reminded to clear the drip tray regularly.
- Oil stains were observed on bare ground in works area at the junction of Po Lam Road, Branch M, Portion C2 and Sau Mau Ping Road. The Contractor should clear the oil stain and dispose of it as chemical waste.

3.3.7 Landscape and Visual Impact

- Construction materials were found in the “no intrusion zone” of the retained trees in Bridge A. The Contractor was reminded to ensure the protection zone is clear of construction waste.

ADVICE ON SOLID AND LIQUID WASTE MANAGEMENT STATUS

3.4 Summary of Solid and Liquid Waste Management

- 3.4.1 The Contractor is registered as a chemical waste producer for this Project. C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 3.4.2 As advised by the Contractor, quantity of waste for disposal in the reporting quarter is summarized in the Table 4.1.

Table 4.1 Summary of Quantity of Waste for Disposal*

Type of waste	Month		
	Dec 12	Jan 13	Feb 13
Total C&D material (m ³)	114,889.07m ³	85,101.91m ³	201,524.02m ³
Hard Rock and Large Broken Concrete	55,678.18m ³	33,792.42m ³	46,987.29m ³
Reuse in the Project	0m ³	0m ³	0m ³
Reuse in other Projects	0m ³	0m ³	5089.23m ³
Disposed to barging point	59210.89m ³	51309.49m ³	149447.50m ³
Metals	15,020kg	72,47kg	18,230kg
Paper cardboard packing	10kg	10kg	10kg
Plastics	0kg	0kg	0kg
Chemical waste	0L	0L	0L
General refuse	84.48tonnes	140.11tonnes	206.26tonnes

*Remarks: The quantity of waste for December 2012, January and February 2013 were updated by the Contractor in February 2013.

- 3.4.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system 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.
- 3.4.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

4 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF ENVIRONMENTAL QUALITY

4.1 Summary of Exceedances and Review of the Reasons for Non-compliance

- 4.1.1 There was no Action and Limit Level exceedance recorded for 1-hr TSP and 24-hr TSP in the reporting quarter.
- 4.1.2 According to the information provided by the Contractor, one (1) noise complaint was received in the reporting quarter. Hence, one (1) Action Level exceedance was received in the reporting quarter.
- 4.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting quarter.

5 COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

5.1 Summary of Environmental complaints, notification of summons and successful prosecutions

According to the information provided by the Contractor, one (1) water related complaint, two (2) air related complaints and one (1) noise related complaint were received in December 2012. No notification of summons and successful prosecution were received in the reporting quarter.

- A complaint was referred by CEDD (ICC) regarding the muddy water impact along the road at New Clear Water Bay Road on 4 December 2012.

Muddy water was potentially contributed from the rainwater and dust which carried by vehicles passing the haul roads at Portion J2. Water spraying has been carried out by workers to clean the carriageway and no muddy water was observed.

The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility. Moreover, regular water spraying was also recommended to clean the carriageway along New Clear Water Bay Road.

No further complaint was received and the complaint was closed

- CEDD(ICC) referred a complaint about dust nuisance along the road at Clear Water Bay Road near Anderson Road crossing on 6 and 11 December 2012.

Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2. Water spraying has been carried out by water truck twice daily to minimize fugitive emission generated.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 5 and 11 December 2012, the measured 24-hour TSP level was found to be $25.4\mu\text{g}/\text{m}^3$ and $81.2\mu\text{g}/\text{m}^3$ respectively. The measured 1-hour TSP levels on 5 and 11 December 2012 were found to be $78.4\mu\text{g}/\text{m}^3$; $82.1\mu\text{g}/\text{m}^3$; $80.6\mu\text{g}/\text{m}^3$ and $78.4\mu\text{g}/\text{m}^3$; $80.2\mu\text{g}/\text{m}^3$; $77.9\mu\text{g}/\text{m}^3$ respectively. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility.

No further complaint was received and the complaint was closed.

- A complaint was sent to CSCE regarding the construction noise impact in Portion R15 on 13 December 2012.

According to the noise monitoring data recorded on 11 and 17 December 2012 at the nearest monitoring station ID5 (Sau Mau Ping Catholic Primary School), the measured noise level in Leq (30-min) were 64.7dB(A) and 64.6dB(A) respectively, which were below the Limit Level.

Noise mitigation measures have been provided at works area R15 to mitigate the noise impacts which included erection of noise barriers and provide acoustic wrappings to the breaking tips of hydraulic breakers worked at the works area for the sides facing the noise sensitive receivers.

Construction noise was potentially contributed by rock breaking activities at retaining wall at R15b of the Project.

The Contractor agreed to start the works after 9 a.m., strictly implement the noise mitigation measures and ensure the effectiveness of noise mitigation measures deployed within works area should be reviewed onsite regularly in order to provide sufficient noise screening effect properly for the NSRs.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A report (December 2012 Version 0) accordingly for the details of the captioned complaint.

- 5.1.1 Table 6.1 summarized the complaint, summons and successful prosecution received in the reporting period.

Table 6.1 Summary of Environmental Complaints, Summons and Prosecutions

	Dec 12	Jan 13	Feb 13	Total
Complaint Logged	4	0	0	4
Summons Served	0	0	0	0
Successful Prosecution	0	0	0	0

- 5.1.2 Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions recorded since the commencement of the Project are given in Appendix F.

6 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

6.1 Comments on Mitigation Measures

6.1.1 According to the environmental site inspections performed in the reporting quarter, the following comments are provided:

6.1.2 Air Quality Impact

- Conduct regular inspection of the working machineries within works area to avoid any dark smoke emission.
- Regular water spraying or equivalent measure should be provided to the access roads, exposed surfaces/slopes and dusty construction works areas to minimize the dust impacts to sensitive receivers nearby.
- Temporary exposed slopes/surfaces should be completely covered up with tarpaulin sheet or shotcreted or hydroseeded if no works is going to carry out on them.
- Proper shelter, in form of covering on the top and at the 3 sides of the cement mixing works station, should be provided prior to any cement mixing work was carrying out on-site.

6.1.3 Construction Noise Impact

- Proper and effective noise mitigation measures (e.g. provision of noise barriers, absorptive material coverage on scaffolding and absorptive material wrappings to the breaking tips of the breakers) should be implemented at the breaking and drilling works areas to minimize the noise impacts to sensitive receivers nearby. The Contractor should conduct regular review on and maintain the noise screening measures provided within works area.

6.1.4 Water Quality Impact

- Effective temporary drainage systems/channels should be provided and wastewater treatment systems and operate properly in works area to cater the surface run-off generated from works area and wheel washing facility. Surface run-off should be properly treated prior to discharge. Any untreated run-off should be avoided from overflowing to public drains. Temporary drainage systems/channels and wastewater treatment systems should be maintained and reviewed regularly and deposited silt and debris inside the temporary drainage channels/systems should be cleared regularly.

6.1.5 Chemical and Waste Management

- Any oil stains and oil mixture found within the works area should be cleared and disposed of them as chemical waste. Proper measures (e.g. provision of drip trays or temporarily with tarpaulin sheets) should be provided if works with potential oil leakage was carrying out. Regular inspection should be conducted at works area to avoid accumulation of chemical waste in works area
- All air compressor, chemical containers and oil drums placed within the works area should be stored with provision of drip trays in order to retain any oil and chemical leakage.
- On-site sorting should be implemented properly, i.e. recycle wastes whenever possible and dispose containers as chemical waste accordingly.

6.1.6 Landscape and Visual Impact

- Proper tree protection measures (e.g. provision of netting to demarcate the protection zone) should be provided to existing trees to avoid accidental damage to them.

6.2 Recommendations on EM&A Programme

- 6.2.1 The impact air quality and noise monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The weekly site inspection ensured that all the environmental mitigation measures recommended in the EIA report were effectively implemented.
- 6.2.2 The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendation was advised for the improvement of the programme.

6.3 Conclusions

- 6.3.1 Air quality and noise monitoring and weekly site inspection were carried out from December 2012 to February 2013, in accordance with the EM&A Manual.
- 6.3.2 All 1-hour and 24-hour TSP monitoring results complied with the Action and Limit level at all monitoring locations in the reporting quarter.
- 6.3.3 As per Contractor's information, one (1) noise complaint was received in the reporting quarter. Hence, one (1) Action Level exceedance was noted in the reporting period and no Limit Level exceedance of noise were recorded in the reporting quarter.
- 6.3.4 Referring to the Contractor's information, one (1) water related complaint, two (2) air related complaints and one (1) noise related complaint and no notification of summons and successful prosecution were received in the reporting quarter.
- 6.3.5 Environmental site inspections were carried out 13 times in the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.