

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 March – May 2013

July 2013

	Name	Signature
Prepared & Checked:	Isabella Yeung	He
Reviewed, Approved & Certified:	Yiu Wah Fung	1

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AECOM Asia Co. Ltd.

11/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong. Tel: (852) 3105 8686 Fax: (852) 2317 7609 www.aecom.com



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3 July 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 March 2013 to May 2013

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for March 2013 to May 2013 received by E-mail on 2 July 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: Mr. YW Fung

CSCEC

Attn: Mr. Wilson Lau

Fax: 3922 9797

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 March 2013 to 31 May 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 monitoring16 sessions1-hour TSP monitoring48 sessionsDaytime Noise monitoring13 sessionsEnvironmental Site Inspection13 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, no Action Level exceedance was recorded since no 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, two (2) water related complaints were received in March and April 2013. 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 New Clear Water Bay Road on 4 March 2013.

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.

 A complaint was referred by DSD regarding the discharging silty water to public stormwater drainage system in Tsui Ping Nullah on 5 April 2013.

The silty water was caused by the sudden surge of rain water under amber rainstorm warning signal and potentially by the discharging water from other construction sites into the site drainage system on 5 April 2013. The surge water then caused overflowing and bypassing the effluent treatment facilities and entered public stormwater drainage system.

Apart from the cleaning works which have been undertaken by the Contractor in Tsui Ping Nullah and sandtrap at Sau Mau Ping Road, the Contractor was recommended to provide sufficient effluent treatment facility on site to avoid any non-complied wastewater discharge.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A reports (March 2013 Version 0 and April 2013 Version 0) accordingly for the details of the captioned complaints.

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 March 2013 to 31 May 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	osition Name		Fax
	Chief Resident Engineer	Dennis Leung	3656 3000	3656 3100
ER (Ove Arup)	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	Site Agent	Wilson Lau	2704 2095	2702 6553
(CSCE)	Environmental Manager	Leo Chung	2704 2095	2702 6553
ET (AECOM)	ET Leader*	Edith Ng	3922 9407	3922 9797
ET (AECOM)	ETLEAGE	Yiu Wah Fung	3922 9366	3922 9797

^{*}The replacement of Ms Edith Ng to Mr Yiu Wah Fung as ET Leader for the Project with effect from 6 May 2013.

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:
- Site clearance
- Establishment of temporary access road and temporary drainage
- Condition survey
- Slope stabilization and upgrading works
- Tree transplanting and protection
- Excavation work at portions A, B, C, J4, S1a, S1b, S2a, S2b, J1a
- Ground investigation and instrumentation
- Trial pit excavation
- Temporary traffic arrangement and road work at J/O Po Lam Road & Sau Mau Ping Road, Sau Fung Street, J2
- Bridge prestressing work
- Toe / Berm planter and platform drainage construction
- Maintenance Work
- · Bridge structural works at Bridge A, B and D
- Retaining wall structural works
- Blasting
- Trench excavation and pipe laying
- Erection and maintenance of Blasting Cages & Fencing
- RE wall panel installation and backfilling
- Permanent backfilling at portion S1c and S1a (former temple area)
- Erection and maintenance of hoarding
- Box culvert construction
- Construction of pedestrian subway
- Erection of panel wall at R15
- Stormwater tank construction
- Box culvert construction
- Excavation of footbridge A, B,C
- Mini-pile construction of footbridge
- Structural works at Footbridge A, B and C
- Pipe Jacking at Hiu Kwong Street
- 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-eight (48) sessions of 1-hr TSP monitoring and sixteen (16) 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 cloudy and sunny, with occasionally rainy 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	Location	Location Level of Exceedance		Month			
Parameter			Mar 13	Apr 13	May 13		
1-hr TSP	ID 1A	No. of monitoring events	15	18	15		
		Action	0	0	0		
		Limit	0	0	0		
	ID 2	No. of monitoring events	15	18	15		
		Action	0	0	0		
		Limit	0	0	0		
	ID 3	No. of monitoring events	15	18	15		
		Action	0	0	0		
		Limit	0	0	0		
	ID 4	No. of monitoring events	15	18	15		
		Action	0	0	0		
		Limit	0	0	0		
	ID 5	No. of monitoring events	15	18	15		
		Action	0	0	0		
		Limit	0	0	0		
		Total	0	0	0		
24-hr TSP	ID 1A	Total No. of monitoring events	0 5	0	0 5		
24-hr TSP	ID 1A						
24-hr TSP	ID 1A	No. of monitoring events	5	6	5		
24-hr TSP	ID 1A	No. of monitoring events Action	5	6	5		
24-hr TSP		No. of monitoring events Action Limit	5 0 0	6 0 0	5 0 0		
24-hr TSP		No. of monitoring events Action Limit No. of monitoring events	5 0 0 5	6 0 0 6	5 0 0 5		
24-hr TSP		No. of monitoring events Action Limit No. of monitoring events Action	5 0 0 5	6 0 0 6	5 0 0 5		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events Action Limit	5 0 0 5 0	6 0 0 6 0	5 0 0 5 0		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events Action Limit No. of monitoring events Action Limit Limit Action Limit	5 0 0 5 0 0 5	6 0 0 6 0 0	5 0 0 5 0 0		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events	5 0 0 5 0 5 0	6 0 0 6 0 0 6	5 0 0 5 0 0 5		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events	5 0 0 5 0 0 5 0	6 0 0 6 0 0 6	5 0 0 5 0 0 5 0		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events Limit No. of monitoring events Action Limit	5 0 0 5 0 5 0 0 5 0	6 0 0 6 0 6 0 0 6	5 0 0 5 0 5 0 0 5 0		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events	5 0 0 5 0 5 0 0 5 0 0 5	6 0 0 6 0 6 0 0 6	5 0 0 5 0 5 0 0 5 0 0 5		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events	5 0 0 5 0 0 5 0 0 5 0 0 5	6 0 0 6 0 6 0 6 0 0 6	5 0 0 5 0 0 5 0 0 5 0 0 5		
24-hr TSP	ID 2	No. of monitoring events Action Limit No. of monitoring events	5 0 0 5 0 5 0 0 5 0 0 5	6 0 0 6 0 6 0 0 6	5 0 0 5 0 5 0 0 5 0 0 5		

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, no noise complaint was received in the reporting quarter; hence, no 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	Location Level of Exceedance		Month			
Parameter			Mar 13	Apr 13	May 13	
Construction	ID 1A No. of monitoring events		4	5	4	
Noise		Limit	0	0	0	
	ID 2	No. of monitoring events	4	5	4	
		Limit	0	0	0	
	ID 3	No. of monitoring events	4	5	4	
		Limit	0	0	0	
	ID 4	No. of monitoring events	4	5	4	
		Limit	0	0	0	
	ID 5	No. of monitoring events	4	5	4	
		Limit	0	0	0	
	To	tal Action Level*	0	0	0	
	T	otal 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

- Dust was generated from the rock drilling activity at works area in R16a. The Contractor should control the dust generation by screens or by water-spraying.
- Mud trails was observed at the site entrances in Gate No.6. Ineffective wheel washing
 facilities were found at these site entrances. The Contractor should review and provide wheel
 washing facilities at each site entrances to ensure the deposited silt on vehicle's wheels and
 bodies was washed off effectively.
- Dark smoke emission was observed from excavators worked in Portion A. The Contractor should repair the excavators and conduct regular inspection of the working machineries worked in site areas to avoid any dark smoke emission.

3.3.4 Construction Noise Impact

Improper wrapping material was provided at the breaking tip of the breaker worked at works
area in Portion C2. The Contractor should provide appropriate noise insulating material to the
breaker's breaking tips or equivalent measures (e.g. installation of noise barriers) to minimize
the noise impacts to the sensitive receivers nearby.

3.3.5 Water Quality Impact

 Although clear effluent was observed discharging to the box culvert which located below Portion F during the inspection, small amount of deposited silt was found in storm drain at lower level of the box culvert. The Contractor should clear debris in the box culvert and 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.

3.3.6 Chemical and Waste Management

- Oil stains were observed under an excavator which placed at works area in Portion C2 (near Tung Li Workshop). Moreover, oil and chemical containers were placed on bare ground without the provision of drip tray. The Contractor should clear the oil stain and dispose of it as chemical waste. Drip tray or equivalent measure should also be provided to the oil and chemical containers to retain leakage, if there is any.
- Oil spillage was observed at Portion C2. The Contractor should clear the spillage and dispose
 of as chemical waste.
- Chemical containers and oil drums were placed on bare ground without the provision of drip tray at works area in Portion A, Portion C2, R15b, R16b and Footbridge C and area next to the construction site office. The Contractor should provide drip tray or equivalent measure to retain leakage from the chemical containers, if any.
- Accumulation of mixing C&D wastes and chemical containers was observed in the waste skip located at works area in Portion R25b, R16b, Footbridge C, Gate No.6 and area next to the construction site office. The Contractor was reminded to clear the waste regularly and implement on-site sorting properly, i.e. recycle wastes whenever possible and dispose containers as chemical waste accordingly.
- Stagnant water was found in drip tray at works area in Portion C2 and Hiu Kwong Street. The Contractor should clear the stagnant water regularly to avoid spillage.

3.3.7 Landscape and Visual Impact

Nil

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*

	Month			
Type of waste	Mar 13	Apr 13	May 13	
Total C&D material (m ³)	53,193m ³	32,732m ³	27,973m ³	
Hard Rock and Large Broken Concrete	44,801m ³	31,645m ³	27,057m ³	
Reuse in the Project	0m ³	0m ³	0m ³	
Reuse in other Projects	2387m ³	0m ³	0m ³	
Disposed to barging point	6004m ³	1087m ³	915m ³	
Metals	48,090kg	70,100kg	51,090kg	
Paper cardboard packing	10kg	10kg	10kg	
Plastics	0kg	10kg	0kg	
Chemical waste	0L	0L	0L	
General refuse	435.50 tonnes	88.45 tonnes	129.18 tonnes	

^{*}Remarks: The quantity of waste for March, April and May 2013 were updated by the Contractor in May 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, no noise complaint was received in the reporting quarter. Hence, no 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, two (2) water related complaints were received in March and April 2013. 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 New Clear Water Bay Road on 4 March 2013.

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.

A complaint was referred by DSD regarding the discharging silty water to public stormwater drainage system in Tsui Ping Nullah on 5 April 2013.

The silty water was caused by the sudden surge of rain water under amber rainstorm warning signal and potentially by the discharging water from other construction sites into the site drainage system on 5 April 2013. The surge water then caused overflowing and bypassing the effluent treatment facilities and entered public stormwater drainage system.

Apart from the cleaning works which have been undertaken by the Contractor in Tsui Ping Nullah and sandtrap at Sau Mau Ping Road, the Contractor was recommended to provide sufficient effluent treatment facility on site to avoid any non-complied wastewater discharge.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A reports (March 2013 Version 0 and April 2013 Version 0) accordingly for the details of the captioned complaints.

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

	Mar 13	Apr 13	May 13	Total
Complaint Logged	1	1	0	2
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

- Control the dust generation by screens or by water-spraying
- Regular inspection of the working machineries worked in site areas to avoid any dark smoke emission.
- Review the effectiveness of wheel washing facilities to ensure no dusty materials were carried out to public haul road by vehicles.

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

 Temporary drainage channels/systems provided in the Project site should be reviewed regularly. Surface run-off from works area should be properly treated with desilting facilities prior to discharge.

6.1.5 Chemical and Waste Management

- Sufficient drip tray should be provided to the equipment and chemical containers in order to retain any oil or chemical leakage. Moreover, regular inspection should be conducted to maintain the status of the equipment to prevent any oil leakage and to ensure that maintenance works are carried out in roofed, paved and confined works area only.
- On-site waste sorting should be provided properly and dispose containers and cleared oil stain as chemical waste accordingly

6.1.6 Landscape and Visual Impact

No specific observation was identified in the reporting quarter.

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 March to May 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, no noise complaint was received in the reporting quarter. Hence, no 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, two (2) water related complaints were received in March and April 2013. 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.