AECOM

Highways Department

Agreement No. CE 20/2009 (EP)

Environmental Team for the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling

(Stage 1) Between Island House Interchange and Tai Hang - Investigation

Quarterly EM&A Summary Report for May 2012 – July 2012

[09/2012]

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14 September 2012
By Fax (2805 5028) and Post

Attn.: Mr. Kelvin Chow

Dear Sir,

Widening of Tolo Highway between Island House Interchange and Tai Hang
Environmental Permit No.: EP-324/2008/A
Condition 3.3 – Submission of Quarterly EM&A Summary Report for May 2012 to July 2012 (Stage 1)

We refer to the Quarterly EM&A Summary Report for May 2012 to July 2012 for the captioned Project submitted by ET via email on 11 and 14 September 2012. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Raymond T W Kong / Mr. Dennis Wong / Mr. William Chiang (Fax: 2761 4864)
ETL, AECOM – Mr. Y T Tang (Fax: 2317 7609)

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EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is governed by an Environmental Permit (EP-324/2008)(EP) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.

The Project aims to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 were commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.

The construction phase of Stage 1 under the EPs and the Environmental Monitoring and Audit (EM&A) programme for Stage 1 of the Project commenced on 23 November 2009. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 May 2012 and 31 July 2012. As informed by the Contract 1 Contractor (CSHK), construction activities in the reporting period were:-

- Temporary shoring, sheetpiling and excavation;
- Pre-bored H-piles construction;
- Pile cap construction;
- Bridge construction;
- Tree felling & transplantation;
- At-grade road construction;
- Demolition of central dividers;
- Retaining wall construction;
- Slope works;
- Soil nails works;
- Noise barrier footing construction and panel installation;
- Road paving; and
- Drainage works.

The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-

- Condition survey of existing structures;
- Excavation of trial trenches to locate existing utilities;
- Ground investigation and predrilling;
- Construction of haul road;
- Extension of box culvert and subway;
- Piling and structural works of bridges;
- Construction of pilecap / spread footing of noise barrier / semi noise enclosure;
- Slope works, including installation of soil nails;
- Retaining wall construction;
- Noise barrier construction;
- Modification of existing bridge structures;
- Entrusted watermains works; and
- Sewer Installation.

Environmental Monitoring Works

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

24-hour TSP monitoring	16 sessions
1-hour TSP monitoring	48 sessions
Daytime Noise monitoring	13 regular sessions
Environmental Site inspection	13 sessions (Contract 1) / 13 sessions (Contract 2)

Breaches of Action and Limit Levels for Air Quality

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

Breaches of Action and Limit Levels for Noise

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

Complaint, Notification of Summons and Successful Prosecution

No environmental complaint was followed up by Environmental Team in the reporting quarter.

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

1 INTRODUCTION

Background

1.1. Tolo Highway and Fanling Highway are expressways in the North East New Territories connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to Shenzhen. At present, this section of Route 9 is dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is only dual-2 lane. Severe congestion is a frequent occurrence during peak periods, particularly in the Kowloon bound direction.

1.2. The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

1.3. The Project is a designated project and is governed by an Environmental Permit (EP-324/2008)(EP) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.

1.4. The scope of the Project comprises mainly:

(i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;

(ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;

(iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.

1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.

1.6. The construction works for Stage 1 of the Project will be implemented under 2 works contracts (Contract 1 and Contract 2). Contract 1 covers the section of Tolo Highway between Island House Interchange and Ma Wo, Contract 2 covers the section of Tolo Highway between Ma Wo and Tai Hang.

1.7. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contracts).

1.8. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of Contract 1 of Stage 1 of the Project, while Gammon Construction Limited (GCL) was commissioned as the Contractor of Contract 2 of Stage 1 of the Project.

1.9. AECOM Asia Co. Ltd. was employed by Highways Department as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for Stage 1 of the Project and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contracts.

1.10. The construction phase of Stage 1 under the EPs commenced on 23 November 2009.

1.11. According to the updated EM&A Manual of Stage 1 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 1 of the Project commenced on 23 November 2009.

Scope of Report

1.12. This is the eleventh Quarterly EM&A Summary Report under the Agreement No. CE 20/2009 (EP) - Widening of Tolo Highway between Island House Interchange and Tai Hang – Investigation. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for Stage 1 of the Project from 1 May 2012 and 31 July 2012.

Project Organization

1.13. 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 of Stage 1, Contract 1 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO1	James Tsang	9038 8797	2667 4000
ER of Stage 1, Contract 2 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO2	Paul Appleton	9097 5833	2653 2348
IEC of Stage 1 (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor of Stage 1, Contract 1 (China State Construction Engineering (Hong Kong) Limited)	Site Agent	Eddie Tang	9863 7686	2667 5666
	Environmental Officer	Michael Tsang	9277 4956	2667 5666
Contractor of Stage 1, Contract 2 (Gammon Construction Limited)	Site Agent	John Chan	9460 4038	2559 3410
	Environmental Officer	Ir Thomson Chang	9213 6569	2559 3410
ET of Stage 1 (AECOM Asia Company Limited)	ET Leader	Y T Tang	3922 9393	2371 7609

Summary of Construction Works

1.14. The construction phase of Stage 1 under the EPs commenced on 23 November 2009. Details of the construction works carried out by the Contract 1 Contractor (CSHK) in this reporting period are listed below:-

- Temporary shoring, sheetpiling and excavation;
- Pre-bored H-piles construction;
- Pile cap construction;
- Bridge construction;
- Tree felling & transplantation;
- At-grade road construction;
- Demolition of central dividers;
- Retaining wall construction;
- Slope works;
- Soil nails works;
- Noise barrier footing construction and panel installation;
- Road paving; and
- Drainage works.

1.15. The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-

- Condition survey of existing structures;
- Excavation of trial trenches to locate existing utilities;
- Ground investigation and predrilling;
- Construction of haul road;
- Extension of box culvert and subway;
- Piling and structural works of bridges;
- Construction of pilecap / spread footing of noise barrier / semi noise enclosure;
- Slope works, including installation of soil nails;
- Retaining wall construction;
- Noise barrier construction;
- Modification of existing bridge structures;
- Entrusted watermains works; and
- Sewer Installation.

1.16. The Construction Programmes are shown in Appendix B.

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

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

2 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters

2.1. The updated EM&A Manual designated 4 air quality monitoring stations and 7 noise monitoring stations to monitor environmental impacts on air quality and noise due to Stage 1 of the Project.

2.2. For air quality, monitoring locations AM2 (Shan Tong New Village) and AM3 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Dynasty View and Tai Po Garden, proposed in the updated EM&A Manual, as approval could not be obtained from the owner's corporation of the premises, impact air quality monitoring was conducted at alternative monitoring locations: AM1 (Ha Wun Yiu) and AM4 (Tai Kwong Secondary School). The monitoring station at 13 Ha Wun Yiu (AM1) was relocated to Fan Sin Temple, 3 Sheung Wun Yiu (AM1A) in February 2010.

2.3. For noise, monitoring stations NM3 (Wong Shiu Chi Middle School), NM6 (PLK Tin Ka Ping Primary School) and NM7 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Tai Po Garden, Dynasty View, Hong Kong Teachers' Association Lee Heng Kwei Secondary School and Grand Palisades, proposed in the updated EM&A Manual, as approval of access could not be obtained from the owner's corporation of the premises or the principal of the education institutes, impact noise monitoring was conducted at alternative monitoring locations: NM1 (Tai Kwong Secondary School), NM2 (Ha Wun Yiu), NM4 (Uptown Plaza) and NM5 (The Paragon).

2.4. As Tai Kwong Secondary School was closed down with effect from 1 September 2011, air quality (AM4) and noise (NM1) monitoring stations were relocated to 168 Shek Kwu Lung Village, naming AM4A and NM1A respectively, starting from 1 September 2011. The same air quality Action and Limit of AM4 were adopted for AM4A. For the measured construction noise level, the same noise Action Level of NM1 was adopted for NM1A, whereas Limit Level for residential noise sensitive receiver was adopted for NM1A.

2.5. The monitoring locations used during the reporting period are depicted in Figure 2.1.

2.6. The updated EM&A Manual also required environmental site inspections for air quality, noise, water quality, chemical, waste management, ecology and landscape and visual impact.

Environmental Quality Performance Limits (Action/Limit Levels)

2.7. The environmental quality performance limits (i.e. Action/Limit Levels) of air quality monitoring were derived from the baseline air quality monitoring results at the respective monitoring stations (AM1, AM2, AM3 and AM4), while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.

2.8. The environmental quality performance limits of air quality and noise monitoring and are given in Appendix D.

Environmental Mitigation Measures

2.9. Relevant environmental mitigation measures were stipulated in the Particular Specification and EPs (EP-324/2008 and EP-324/2008/A) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

3 AIR QUALITY MONITORING

3.1. Air quality monitoring, including 1-hour and 24-hour TSP, was conducted at least 3 times every 6 days and at least once every 6 days respectively at the 4 monitoring stations (AM1A, AM2, AM3 and AM4A), in accordance with the updated EM&A Manual.

3.2. The weather was mostly sunny, with several cloudy and rainy in the reporting quarter. The major dust source in the reporting period included construction activities from Stage 1 of the Project, as well as nearby traffic emissions.

3.3. 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		
		May 12	Jun 12	Jul 12
1-hr TSP	AM1A	18	15	15
	AM2	18	15	15
	AM3	18	15	15
	AM4A	18	15	15
24-hr TSP	AM1A	6	5	5
	AM2	6	5	5
	AM3	6	5	5
	AM4A	6	5	5

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

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			May 12	Jun 12	Jul 12
1-hr TSP	AM1A	Action	0	0	0
		Limit	0	0	0
	AM2	Action	0	0	0
		Limit	0	0	0
	AM3	Action	0	0	0
		Limit	0	0	0
	AM4A	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	***0***
24-hr TSP	AM1A	Action	0	0	0
		Limit	0	0	0
	AM2	Action	0	0	0
		Limit	0	0	0
	AM3	Action	0	0	0
		Limit	0	0	0
	AM4A	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	***0***

3.4. All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting quarter.

3.5. The graphical plots of the impact air quality monitoring results are provided in Appendix E.

4 CONSTRUCTION NOISE MONITORING

4.1. Construction noise monitoring was conducted at the 7 monitoring stations (NM1A, NM2, NM3, NM4, NM5, NM6 and NM7) for at least once per week during 07:00 – 19:00 in the reporting quarter.

4.2. The major noise sources during the noise monitoring included construction activities of Stage 1 of the Project and nearby traffic noise. In addition, for NM3 and NM6, general school activities are also a major noise source during the noise monitoring.

4.3. The number of construction noise monitoring events and exceedances are summarized in Table 4.1 and Table 4.2 respectively.

Table 4.1 Summary of Number of Monitoring Events for Construction Noise

Monitoring Parameter	Location	No. of monitoring events		
		May 12	Jun 12	Jul 12
	NM1A	5	4	4
	NM2	5	4	4
	NM3	5	4	4
	NM4	5	4	4
	NM5	5	4	4
	NM6	5	4	4
	NM7	5	4	4

Table 4.2 Summary of Number of Monitoring Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			May 12	Jun 12	Jul 12
	NM1A	Level of Exceedance	0	0	0
	NM2		0	0	0
	NM3		0	0	0
	NM4		0	0	0
	NM5		0	0	0
	NM6		0	0	0
	NM7		0	0	0
		Total	***0***	***0***	***0***

4.4. All measured construction noise levels were below the Limit level and the graphical plots of the trends of the monitoring results are provided in Appendix F. No Action/Limit exceedance of construction noise monitoring was recorded in the reporting quarter.

4.5. There was no noise related complaints followed up by Environmental Team in the reporting period. Hence, no Action/Limit Level exceedance was recorded.

5 ENVIRONMENTAL SITE INSPECTION AND AUDIT

5.1. Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for Stage 1 of the Project. In the reporting quarter, 13 site inspections were carried out for each of Contract 1 and Contract 2 of the Project.

5.2. Particular observations and reminder during the site inspections for Contract 1 are described below:-

Air Quality

5.2.1. Mud trails were observed at the site entrance in Gate 44. The Contractor should clear the mud trails on the public road.

5.2.2. Exposed slopes at NBWNA were not completely covered up by tarpaulin sheet. The Contractor was reminded to cover up the exposed slopes with tarpaulin sheet completely.

Noise

5.2.3. The absorptive material wrapping to the breaking tip of the breakers working in works area were found improper at Gate 44. The Contractor should provide proper absorptive material wrapping to the breaking tips of the breakers working in works area to minimize the noise impact.

Water Quality

5.2.4. Mud and cement water were found accumulated inside the u-channel at Wall 8 and Bridge 10 East Abutment respectively. The Contractor was reminded to clear the mud, cement water and deposited cement inside the u-channel.

5.2.5. Muddy water was found accumulated inside the sump pit at NB20. The Contractor was reminded to clear the muddy water to avoid any substandard water flowing outside the works area.

5.2.6. Slurry was found accumulated inside the piling area at Gate 26. The Contractor should clear the slurry regularly to avoid the slurry overflowing from the works area.

Chemical and Waste Management

5.2.7. Chemical container was observed without chemical label at Wall 8. The Contractor was reminded to affix the chemical label on the chemical container.

5.2.8. Oil stains were found on ground at Bridge 11 and on ground near the breaking tip of breaker under Bridge 11 near Gate 4. The Contractor was reminded to clear the oil stains and dispose of as chemical waste. The Contractor was reminded to provide tarpaulin sheet to the breaking tip to retain oil leakage.

Landscape and Visual Impact

5.2.9. No adverse observation was identified in the reporting quarter.

Miscellaneous

5.2.10. Stagnant water was found accumulated inside the excavation area near W8 Bay 2-3 and inside the drip tray at NB16 & Wall 8. The Contractor was reminded to remove the stagnant water and dispose of as chemical waste.

5.3. Particular observations during the site inspections for Contract 2 are described below:-

Air Quality

5.3.1. Mud trails were observed on ground at the site entrance at S37. 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. Mus trails on the piblic road should be cleared.

5.3.2. Dry soil surface was observed at S44. The Contractor was reminded to provide dust suppression measure to the dry soil surface to avoid generation of fugitive dust.

5.3.3. Cement was observed on ground in the works area and on the access road at Bridge 15A. The Contractor was reminded to clear it up or spray water on the cement to prevent generation of fugitive dust.

Noise

5.3.4. No adverse observation was identified in the reporting quarter.

Water Quality

5.3.5. Accumulation of silty water was observed inside the wheel washing bay at W71. The Contractor was reminded to clear the deposited silt inside the wheel washing bay regularly and maintain the wheel washing facilities properly.

5.3.6. Some leaves were observed inside the u-channel at access to W35A. The Contractor was reminded to remove the leaves inside the drainage channel to maintain the drainage system properly.

5.3.7. Broken sand bags were observed placed on ground near the public drainage at Bridge 12A. The Contractor was reminded to replace the broken sand bags on ground.

5.3.8. Mud was found accumulated inside the u-channel at S44. The Contractor was reminded to clear the mud inside the u-channel and provide addition sand bags along the site boundary to avoid overflowing of mud and substandard water from the works area.

5.3.9. Muddy water was observed flowing outside to the public road from the gaps of water barrier near the piling area at Bridge 15A Pier 6. The Contractor was reminded to align a bunding or provide tarpaulin sheet at the footing of the water barrier to divert the surface run-off to desilting facility.

5.3.10. Exposed soil stockpile was observed at works area at Tai Wo Service Road West during rainstorm. The Contractor was reminded to cover up the exposed soil stockpile with tarpaulin sheet to minimize generation of silty run-off during rainstorm.

5.3.11. General refuse and C&D materials were observed near the u-channel at S20. The Contractor was reminded to remove the general refuse and C&D materials from the u-channel and properly maintain the drainage system on-site.

5.3.12. Substandard run-off was found discharging to the public drainage at NB42. The Contractor was reminded to properly maintain and review the temporary drainage systems provided within works area and ensure that run-off was properly desilted prior to discharging to public drains. Any untreated run-off should be avoided from overflowing to public drains.

Chemical and Waste Management

5.3.13. Breaking tip of breaker was found placed on bare ground at S38. The Contractor was reminded to place the breaking tip onto the tarpaulin sheet to avoid the oil leaked from the breaking tip to the ground.

5.3.14. The drain hole of a drip tray placed at Bridge 15A Pier 6 was unplugged. The Contractor was reminded to seal up the drain hole to prevent oil leakage from the equipment.

5.3.15. Vegetation wastes were found accumulated along the site boundary at W35A. The Contractor was reminded to clear up the vegetation wastes to keep the site in a tidy condition.

5.3.16. Recyclable waste such as wood was found mixing with general refuse and construction material inside the waste skip at W38. The contractor was reminded to sort out the recyclable waste and clear the waste skip regularly.

5.3.17. Cans and bottles were observed in site area at NB42. The Contractor was reminded to remove the cans and bottles regularly. The Contractor was also reminded to maintain the site cleanliness and tidiness.

Landscape and Visual Impact

5.3.18. Construction material was found placed near the retained tree at NB44. The Contractor was reminded to remove the construction material and provide proper protective measure to the retained tree.

Miscellaneous

5.3.19. Stagnant water was found accumulated inside the gullies and tyres on the bridge deck at Bridge 15A. The Contractor was reminded to remove the stagnant water.

6 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

6.1.1 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are registered as chemical waste producers for Stage 1 of the Project. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

6.1.2 As advised by the Contract 1 Contractor (CSHK), 3,402m^3 of inert C&D material was disposed as public fill to Tuen Mun 38(of which 12m^3 was broken concrete), while 345m^3 of general refuse were disposed at NENT landfill. 17kg of metal, 317kg of paper/cardboard and 5,505kg of plastic were collected by recycling contractor in the reporting quarter. 3,336m^3 and 10,854m^3 of inert C&D materials were reused on site and in NENT for backfilling respectively. No chemical waste was collected by licensed contractor in the reporting period.

6.1.3 As advised by the Contract 2 Contractor (GCL), 475m^3 of inert C&D material were disposed to Tuen Mun 38 and 1,565m^3 of general refuse was disposed to NENT landfill in the reporting period.

6.1.4 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

7 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY

7.1. There was no 1-hour TSP and 24-hour TSP monitoring exceedance recorded in the reporting quarter.

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

7.3. There was no noise related complaint followed up by Environmental Team in the reporting period..

8 ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

8.1. A 24-hour complaint hotline at 6628 8366 has been established for Stage 1 (both Contract 1 and Contract 2) of the Project. Also a 24-hour hotline at 8201 6669 is established for Contract 1 of the Project. The hotline numbers are displayed at the site entrances, fencings and project signboards, as well as printed on publications for the public, such as newsletters.

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

8.3. No environmental complaint was followed up by Environmental Team in the reporting quarter.

8.4. Cumulative statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix G.

9 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

Comments on Mitigation Measures

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

Air Quality Impact

- All plants on site should be 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 to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement mixing operations.
- Provide water spraying to suppress fugitive dust for any dusty construction activity.

Construction Noise Impact

- Properly erect the temporary noise barriers in accordance with the Environmental Permit requirement.
- Noise barriers should be closely packed and properly aligned to ensure effective noise reduction.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Sound insulation materials shall be wrapped at the breaker tip for concrete breaking works.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Better scheduling of construction works to minimize noise nuisance.

Water Quality Impact

- 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.
- Stagnant water accumulated within works area should be removed.

Chemical and Waste Management

- C&D materials and wastes should be sorted, recycled/treated and removed timely.
- All chemical containers and oil drums should be properly stored.
- All plants and vehicles on site should be properly maintained to prevent oil leakage.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil leakage.

- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.

Landscape and Visual Impact

- All retained trees should be properly fenced off at the works area.

Recommendations on EM&A Programme

9.2. The impact air quality and noise monitoring programme 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 acceptability of Stage 1 of the Project. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended in the ERR were effectively implemented.

9.3. 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.

Conclusions

9.4. The construction phase and EM&A programme of Stage 1 of the Project commenced on 23 November 2009.

9.5. Air quality and noise monitoring, weekly site inspections were carried out in the reporting quarter, in accordance with the updated EM&A manual.

9.6. All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Level in the reporting quarter.

9.7. There was no noise related complaints followed up by Environmental Team in the reporting period. No Action/Limit Level exceedance of construction noise monitoring was recorded in the reporting quarter.

9.8. No environmental complaint was followed up by Environmental Team in the reporting period.

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