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NT EAST Development Office**

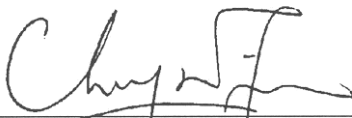
Contract No. ST89/02

Sha Tin Heights Tunnel and Approaches

**Environmental Monitoring and Audit
Quarterly Report (Version 1.0)**

May to July 2006

Certified By


(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

1. This is the fifteenth Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Sha Tin Heights Tunnel and Approaches” (the Project). This summary report presents EM&A works performed in the period between May and July 2006.
2. The construction activities undertaken in this reporting quarter were:
 - Slope works;
 - Bridge works;
 - Construction of Retaining Wall at CKM;
 - Rising existing manhole level at CKM;
 - Drainage works; and
 - Demolition of Temporary Access Road No.1.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manuals and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Air Quality

1-hr TSP Monitoring

4. All construction air quality monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded in the reporting period.

24-hr TSP Monitoring

5. All construction air quality monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded in the reporting period.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in this reporting quarter, except that the monitoring (2300-0700) at Station N5 and N6 was cancelled on 17 May 2006 due to the adverse weather conditions. No Limit Level exceedance was recorded.
7. Two Action Level exceedances were recorded as ER and EPD received a noise complaint on 1 May 2006 and 19 June 2006.

Environmental Complaint and Prosecution

8. No environmental prosecution was recorded in the reporting quarter.
9. Two noise complaints were received by ER and EPD on 1 May 2006 and 19 June 2006.

10. On 1 May 2006, ER received a noise complaint and referred to ET Team on 3 May 2006, which was about the noise nuisance arising from the temporary steel plates at night at Che Kung Miu Road. The complaint was considered valid and related to the Project works. The Complaint investigation report was issued by ET on 12 May 2006.
11. On 19 June 2006, EPD received a noise complaint and refer to ET Team on 26 June 2006, which was about general construction noise and flytipping/dumping of construction waste caused by construction work near Tin Sum Village at Che Kung Miu Road. The complaint investigation report was issued by ET on 5 July 2006. The complaint was considered not justifiable.

Environmental Licensing and Permitting

12. License/Permits granted to the Project include the Environmental Permit (EP), Construction Noise Permits (CNP), Waste Disposal (Chemical Waste) License and Water Discharge Permit.
13. A total of four new CNPs (CNP no. GW-RN0238-06 and GW-RN0242-06, GW-RN0300-06 and GW-RN0327-06) were issued by the EPD in the reporting period.

Future Key Issues

14. Demolition of TAR 1, slope upgrading work and rising existing manhole level at Che Kung Miu Road will be the major construction activities for the coming month.
15. The anticipated environmental impacts will be mainly on surface runoff during rainy season, construction dust and noise impact during the slope upgrading work, demolition of TAR1 and rising existing manhole level at Che Kung Miu Road.

1. INTRODUCTION

- 1.1 Sha Tin Heights Tunnel and Approaches (SHT) (hereinafter called the “Project”) forms part of the Route 9 (Formerly Route 8) between Cheung Sha Wan and Sha Tin project, which will be a new expressway connecting west Kowloon and Sha Tin. The Project, the entrusted portion of the Route 9 (Formerly Route 8) project, is being managed and implemented by Civil Engineering & Development Department (CEDD).
- 1.2 The Project works mainly comprise the site formation for a toll plaza at the valley of Sha Tin Heights, the construction of 1 km long dual three-lane tunnels under Sha Tin Heights, a 0.6 km long dual two-lane tunnel approach road in Tai Wai, two slip road viaducts with approximately total length of 1 km connecting to Che Kung Miu Road, associated noise barriers and noise enclosures, drainage, slope works and landscape works. The remainder of the Route 9 (Formerly Route 8) (Main Portion, R9K) project forms the Kowloon Section and is being managed and implemented separately by Highways Department.
- 1.3 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449, EIAO). An environmental impact assessment (EIA) report has been prepared in 1998 for the Route 9 (Formerly Route 8) project to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and culture impacts, and identify possible mitigation measures. An updated Final EIA report was subsequently completed in August 1999 to cater for some changes in the main portion. The 1998 and 1999 Route 9 (Formerly Route 8) EIA (R9 EIA Reports) reports were included in the EIA register under the EIAO as report number EIA-135/BC and AEIAR-022/1999 respectively. EM&A Manuals for each of the R9 EIA reports were also included as part of the EIA reports in the register.
- 1.4 Subsequent to the endorsement of the R9 EIA reports by EPD in November 1999, the R9 project was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the Route 9 (Formerly Route 8) project was then separated into the SHT and R9K portions. Meanwhile further design amendments had also been proposed for the SHT during the detailed design stage to resolve various engineering constraints. In view of these changes, an Environmental Review on the SHT was undertaken to update the findings of the R9 EIA reports. The Environmental Review report for R9S was completed in September 2001 and an Environmental Permit No. EP-104/2001 was issued on 4th October 2001 for the Project.
- 1.5 The works of the SHT is constructed under CEDD’s construction Contract No. ST 89/02 “Sha Tin Heights Tunnel and Approaches”. The site layout of the Project is shown in Figure 1.
- 1.6 Cinotech Consultants Limited (Cinotech) was commissioned by CEDD to undertake the Environmental Team (ET) Services for the Project. This is the fifteenth Quarterly EM&A report summarizing the EM&A works for the Project between May and July 2006.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

- 2.1 An organization structure and the line of communication were set up for the Project between the CEDD, Engineer Representative (ER), Independent Environmental Checker (IEC), the Contractor and Environmental Team (ET). The organization chart and contact details are shown in Appendix A and Figure 3.

Construction Programme and Synopsis of Work

- 2.2 The construction programme is presented in Appendix B. The construction activities undertaken in this reporting quarter were:
- Slope works;
 - Bridge works;
 - Construction of Retaining Wall at CKM;
 - Rising existing manhole level at CKM;
 - Drainage works; and
 - Demolition of Temporary Access Road No.1.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manuals designate locations for the ET to monitor environmental impacts in terms of air quality and noise due to the Project. The Project area and monitoring locations are depicted in Figures 2a and 2b. Appendix C gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

- 3.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manuals. Copies of calibration certificates are attached in the appendices of the Monthly Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

- 3.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in Appendix D.

Environmental Mitigation Measures

- 3.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manuals for the Contractor to implement. A list of mitigation measures is given in Appendix E.

4. MONITORING RESULTS

- 4.1 The summary exceedance report in this reporting quarter is presented in Appendix J.

Weather Conditions

- 4.2 The weather during monitoring sessions was mainly sunny and cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Air Quality

- 4.3 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter.
- 4.4 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP was recorded in the reporting period.
- 4.5 The monitoring data of 1-hour and 24-hour TSP Levels are shown in the appendices of the Monthly Reports. The graphical presentations of the monitoring results are shown in Appendix F.

Noise

- 4.6 All construction noise monitoring was conducted as scheduled during the reporting quarter.
- 4.7 Two Action Level exceedances were recorded as two noise complaints received, No Limit Level exceedance was recorded.
- 4.8 On 1 May 2006, a public complaint received by ER, which was about the noise nuisance arising from the temporary steel plates at night at Che Kung Miu Road. The noise complaint was referred to ET on 3 May 2006. The complaint was considered valid and related to the project works. The complaint investigation report was issued by ET on 12 May 2006.
- 4.9 On 19 June 2006, a public complaint was received by EPD, which was about general construction noise and flytipping/dumping of construction waste caused by construction work near Tin Sum Village, at Che Kung Miu. The noise complaint was referred to ET on 26 June 2006. According to ER's information, only hand held tools were used when formwork were erected to wall of RW5 Bay 12 & 14. In addition, no mechanical equipment was used in the concerned area. Besides, one load of construction waste was disposed on 19 June 2006. Base on the above information, the complaint was considered not justifiable. The complaint investigation report was issued by ET on 5 July 2006
- 4.10 The noise monitoring data are attached in the appendices of the Monthly Reports. The graphical plots of the noise monitoring results in this reporting quarter are shown in Appendix G.

5. AUDIT RESULTS

Implementation Status of Environmental Mitigation Measures

- 5.1 The implementation status of environmental mitigation measures (EMIS) is given in Appendix G.

Site Audit Summary

Water Quality

- 5.2 Water accumulation was observed in the ditch at Portion 15, Abutment No.4 and Retaining Wall No.7 of CKM Road after heavy rainfall. The Contractor was reminded to implement remedial measures such as pump water away or spray larvicide for avoiding mosquito breeding.
- 5.3 Silt/sediment accumulation was observed in U-channel and culvert box at Portion 9. The Contractor was reminded to clean up the silt regularly.
- 5.4 Muddy water was observed at the U-channel of Portion 9 due to the accidentally burst of water pipe, which transferred the wheel washing water from box to sedimentation tank. The Contractor repaired the burst water pipe immediately. However, the Contractor was reminded to maintain the water pipe in good condition.
- 5.5 Accumulation of sediment with sands was noted at Culvert Box 5. The pump used for the runoff or effluent could not provide its routine function due to blockage by sediment. The Contractor was reminded to clear up the sediment so that the pump could maintain its operational purposes.
- 5.6 The U-channel was obstructed by a pile of sandy materials at Retaining Wall G. The Contractor was reminded to remove the materials in order to prevent runoff from accumulation at the U-channel.

Air Quality

- 5.7 Dark smoke emitted from the excavator was observed at Portion 9. Good Maintenance should be provided.
- 5.8 Muddy materials were noted on the haul road near site entrance in Che Kung Miu Road. The Contractor was reminded to sweep the materials away frequently and spray with water frequently in order to avoid dust generation.

Chemical and Waste Management

- 5.9 Three drums of diesel oil were observed on bare ground at Tai Po Road bus station. Drip tray should be provided to avoid spillage.
- 5.10 Accumulation of generation refuse was observed next to the wheel washing bay near TAR No.1, South Portion. The Contractor was reminded to dispose of the refuse and keep the site tidiness.

Permit / Licenses

- 5.11 No environmental deficiencies were identified during the site environmental inspection.

Status of Environmental Licensing and Permitting

- 5.12 Environmental licenses and permits including Environmental Permit for the Project, Construction Noise Permits (CNPs), Waste Disposal (Chemical Waste) License and Water Discharge Permit were in place and valid during this reporting quarter. A summary status of licenses and permits is given in Appendix H.

Advice on Solid Waste Management Status

- 5.13 The solid waste generated from the Project site office was mainly general refuse that was collected by a licensed collector on an as need basis.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)**Summary of Exceedances***1-hr TSP*

- 6.1 No Action/Limit Level exceedance was recorded in the reporting quarter.

24-hr TSP

- 6.2 No Action/Limit Level exceedance was recorded in the reporting quarter.

Noise

- 6.3 On 7 February 2006, one Action Level exceedance was recorded due to a public complaint received, which was about the construction noise and dust generating from the works area at Che Kung Miu near Tin Sam Village.
- 6.4 One Limit Level exceedance was recorded at Station N5 (Garden Villa) on 16 February 2006. According to the field observation, the exceedance was considered related to the breaking works at TAR1. Notice of exceedance was issued to the Contractor on 17 February 2006. Mitigation measures, such as enclosing the breaker with acoustic absorbing material, were implemented by the Contractor to rectify the situation. No further exceedance was recorded.

Review of the Reasons for and the Implications of Non-compliance

- 6.5 There was no non-compliance from the site audits in this reporting quarter. The observations and recommendations made in each individual site audit session were attached in the Monthly Reports.

Summary of Actions Taken

6.6 In this reporting quarter, the following mitigation measures were implemented:

- Frequent watering on haul roads was applied for dust suppression;
- Excavated/dusty materials have been covered by tarpaulin or water sprayed;
- Wheel washing facilities were provided;
- Accumulation of stagnant water in site area;
- Groundwater pumped out was recycled via sediment tanks; and
- 'AquaSed' has been setup to incorporate with the modified desilting system.

7. ENVIRONMENTAL COMPLAINTS

Complaint Log

- 7.1 The implementation status of the complaint handling procedure is summarized in Appendix I.
- 7.2 Two noise complaints were received by ER and EPD on 1 May 2006 and 19 June 2006.
- 7.3 On 1 May 2006, ER received a noise complaint and referred to ET Team on 3 May 2006, which was about the noise nuisance arising from the temporary steel plates at night at Che Kung Miu Road. The complaint was considered valid and related to the Project works. The Complaint investigation report was issued by ET on 12 May 2006.
- 7.4 On 19 June 2006, EPD received a noise complaint and refer to ET Team on 26 June 2006, which was about general construction noise and flytipping/dumping of construction waste caused by construction work near Tin Sum Village at Che Kung Miu Road. The complaint investigation report was issued by ET on 5 July 2006. The complaint was considered not justifiable.

8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 No environmental prosecution was recorded in the reporting quarter.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Slope upgrading works, demolition of TAR1 and rising existing manhole level at Che Kung Miu will be the major construction activities for the coming quarter.
- 9.2 The anticipated environmental impacts will be mainly on surface runoff during rainy season, construction dust and noise impact during the slope upgrading work, demolition of TAR1 and rising existing manhole level at Che Kung Miu.