

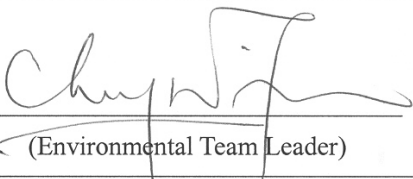
**Civil Engineering & Development Department
NT EAST Development Office**

Contract No. ST89/02

Sha Tin Heights Tunnel and Approaches

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

February to April 2005

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.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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EXECUTIVE SUMMARY

1. This is the tenth 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 February and April 2005.
2. The construction activities undertaken in this reporting quarter were:
 - Backfilling;
 - Construction of Portal Buildings;
 - Tunnel Enlargement / Blasting;
 - Construction of RC Enclosure Structure;
 - Construction of Retaining Wall;
 - Construction of Piers;
 - Drainage works; and
 - Bored pile foundation

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 1-hour TSP monitoring was conducted as scheduled except the air monitoring at Garden Villa. The 1-hour TSP air monitoring at this location was suspended from 20 December 2004 and had been relocated to the slope no. 07SW-D/FR4 beside Garden Villa and opposite to the petrol filling station on Tai Po Road. The TSP air monitoring has been operating at the new monitoring station since 14 February 2005.
5. No Action/ Limit Level exceedance was recorded in the reporting period.

24-hr TSP Monitoring

6. All 24-hour TSP monitoring was conducted as scheduled except for the air monitoring location at Garden Villa. The 24-hour TSP air monitoring at such location was suspended from 7 December 2004 and had been relocated to the slope no. 07SW-D/FR4 beside Garden Villa and opposite to the petrol filling station on Tai Po Road. The TSP air monitoring has been operating at the new monitoring station since 14 February 2005.
7. No Action/Limit Level exceedance was recorded in the reporting quarter.

Construction Noise

8. All construction noise monitoring was conducted as in this reporting quarter.

9. No Limit Level exceedance was recorded in the reporting period. Two Action Level exceedances were recorded due to two public complaints received by the ET Leader on 8 and 30 March 2005.

Environmental Complaint and Prosecution

10. No environmental prosecution was recorded in the reporting quarter.
11. Three environmental complaints were received in this reporting month on 8 and 30 March 2005, 25 April 2005. Complaint investigation was undertaken by ET and the investigation results were submitted to EPD and all related parties.

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 nine new CNPs were issued by the EPD in this reporting period. A Variation to Environmental Permit (EP-104/2001/B) was also granted by the EPD on 16 February 2005.

Future Key Issues

14. Construction of portal buildings and segment erection will be the major construction activities for the coming quarter.
15. The anticipated environmental impacts will be mainly on surface runoff during rains, dust generation during blasting works and construction noise impact during restricted-hour works.

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 tenth Quarterly EM&A report summarizing the EM&A works for the Project between February and April 2005.

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:
- Backfilling;
 - Construction of Portal Buildings;
 - Tunnel Enlargement / Blasting;
 - Construction of RC Enclosure Structure;
 - Construction of Retaining Wall;
 - Construction of Piers;
 - Drainage works; and
 - Bored pile foundation

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 or cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Air Quality

4.3 All the dust monitoring was conducted as scheduled except for the air monitoring location at Garden Villa. The 1-hour and 24-hour TSP air monitoring at this location were suspended from 20 and 7 December 2004, respectively due to the noise generated from the sampler disturbing the residents. The air monitoring station has been relocated to the slope no. 07SW-D/FR4 beside Garden Villa and opposite to the petrol filling station on Tai Po Road. The TSP air monitoring has been operating at the new monitoring station since 14 February 2005.

4.4 No Action / Limit Level exceedance was recorded in the reporting month.

4.5 The monitoring data of 1-hr and 24-hr 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 No Limit Level exceedance was recorded in the reporting quarter. Two Action Level exceedances were recorded due to two public complaints received by the ET Leader on 8th and 30th March 2005. The details of the complaints are provided in Appendix I.

4.8 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 The Contractor was reminded to fill up the hole of concrete block properly for avoiding mosquito breeding.
- 5.3 Water pondings were found at South Portal, North Portal and on the top of the site office at Che Kung Mu Road. The Contractor was reminded to fill/ clear it up as soon as possible.
- 5.4 The Contractor was reminded to provide a de-silting facility with adequate capacity to prevent substandard discharge from site area at Che Kung Miu Road.

Air Quality

- 5.5 Dark smoke emission from plant was observed at portion 9. The contractor was reminded to keep the equipment on site well maintained.

Chemical and Waste Management

- 5.6 General refuses accumulated at South Portion Building, Portion 9 and the site near Che Kung Mu Road. The Contractor was reminded to remove the refuses regularly and maintain good house keeping in the site area.

Status of Environmental Licensing and Permitting

- 5.7 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

- 5.8 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 due to the Project 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 No Limit Level exceedance was recorded in the reporting quarter. Two Action Level exceedances were recorded due to two public complaints received by the ET Leader on 8th and 30th March 2005. The details of the complaints are provided in Appendix I.

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

- 6.4 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

- 6.5 In this reporting quarter, the following mitigation measures were implemented:
- Frequent watering on haul roads was applied for dust suppression;
 - Drip trays for oil storage of oil buckets have been provided;
 - Excavated/dusty materials have been covered by tarpaulin or water sprayed;
 - Wheel washing facilities were provided;
 - Groundwater pumped out was recycled via sediment tanks; and
 - 'AquaSep' has been setup to incorporate with the modified desilting system.

7. ENVIRONMENTAL COMPLAINTS

Complaints Log

- 7.1 All complaints have been handled in accordance with the EM&A Manuals. The implementation status of the complaint handling procedure is summarized in Appendix I.
- 7.2 Three environmental related complaints were received in the reporting period.
- 7.3 The first complaint was forwarded by EPD on 8th March 2005. It was about nuisance of restricted hour construction noise and construction dust at residents of Garden Villa. The Contractor was reminded to enhance the dust mitigation measures.
- 7.4 The second complaint was forwarded by EPD on 30th March 2005 and was about construction noise due to early use of Temporary Access Road no.1. It was considered not related to the SHT Project.
- 7.5 The third environmental complaint was forwarded by EPD on 25th April 2005, regarding construction dust arising from the tunnel blasting works near Shatin Heights. Complaint investigation was undertaken by the ET and the complaint was considered valid. Mitigation measures were implemented by the Contractor and were considered effective.

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 Construction of portal buildings and segment erection will be the major construction activities for the coming quarter. The anticipated environmental impacts will be mainly on surface runoff during rains, dust generation during blasting works and construction noise impact during restricted-hour works.