

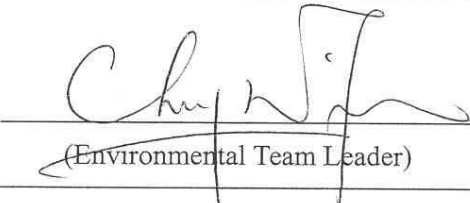
Territory Development Department
NT EAST Development Office

Sha Tin New Town, Stage II

Road T3 and Associated Roadworks

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

April 2003 – June 2003

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 first Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Sha Tin New Town, Stage II Road T3 and Associated Roadworks” (the Project). This summary report presents EM&A works performed in the period between April 2003 and June 2003.
2. The construction activities undertaken in the reporting quarter were:
 - Site clearance works
 - Tree felling and transplanting works
 - Site office erection
 - Drilling and ground investigation works
 - Demolition of asbestos containing structures

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the Updated EM&A Manual 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

4. Dust monitoring started in June 2003 as the commencement date of construction of the Project was 5th June 2003.

1-hour TSP Monitoring

5. All 1-hour TSP monitoring was conducted as scheduled except 9th, 12th and 13th June 2003. Due to the rainstorm, the monitoring work at AQ1 and AQ2 on 9th June 2003 was postponed to 10th June 2003, the monitoring work at all stations on 12th June 2003 was cancelled, and monitoring work at AQ1 on 13th June 2003 was cancelled. No Action/Limit Level exceedance was recorded in the reporting quarter.

24-hour TSP Monitoring

6. All 24-hour TSP monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded in the reporting period.

Construction Noise

7. Besides the 6 noise monitoring stations in the Updated EM&A Manual, an additional noise monitoring site, N7, was proposed and confirmed in the meeting held on 19th May 2003. Pre-construction noise monitoring at N7 was conducted between 21st May 2003 and 3rd June 2003.
8. Construction noise monitoring started in June 2003 as the commencement date of construction of the Project was 5th June 2003. All construction noise monitoring was conducted as scheduled except that monitoring work on 12th June 2003 was cancelled due to adverse weather.
9. One Action Level exceedance (complaint) was raised by a resident living at Holford Garden on 21st May 2003 (Refer to “Environmental Complaint and Prosecution” for details).

10. One Limit Level exceedance was recorded at monitoring station N4 on 18th June 2003. However, no direct evidence showed that the exceedance was due to the Project works and the exceedance was considered invalid.

Water Quality

11. There was no discharge from the construction sites to the nearby surface channel to the Shing Mun River in this reporting quarter. Water quality monitoring works were conducted at the two designated control points (C1 and C2) only as scheduled. No Action/Limit Level exceedance was recorded in the reporting quarter.

Environmental Complaint and Prosecution

12. No environmental prosecution was received during the reporting quarter.
13. One complaint related to the Project works was reported on 21st May 2003. The complaint, which was transferred by the Environmental Protection Department (EPD) to Environmental Team (ET) Leader on 22nd May 2003, was concerning tree cutting activities near South East of Tai Wai New Village. Complaint investigation was carried out by ET and a complaint investigation report was submitted to EPD and ER on 27th May 2003.
14. One public enquiry was received by TDD on 21st May 2003 and TDD subsequently referred the enquiry to the Environmental Team (ET) Leader of the Project on 23rd May 2003. The complaint was about the traffic noise and dust problem after the tree felling and site clearance in the site adjacent to Holford Garden. Investigation was carried out by ET and an investigation report was submitted to TDD and ER on 5th June 2003.

Environmental Licensing and Permitting

15. License/Permit granted to the Project includes the Environmental Permit (EP).

Future Key Issues

16. Excavation works, site clearance works, site formation works, demolition of asbestos containing materials will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on dust, surface runoff and noise due to earthworks.

1. INTRODUCTION

- 1.1 The Road T3 Project forms part of the continuing programme for the development for the Sha Tin New Town. It will provide the essential link between R9-CSWST with the high speed road networks in the north east New Territories and alleviate the traffic congestion at the local roads in Tai Wai, Sha Tin. The Project site is shown in Figure 1.
- 1.2 The Project is a designated project and an Environmental Permit No. EP-135/2002 was issued in May 2002 (T3 EP) to the Territory Development Department (hereinafter called the “Project Proponent”) as the Permit Holder. The Environmental Permit was later amended (Environmental Permit No. EP-135/2002/A). Under Condition 2.3 of the T3 EP, an updated Environmental Monitoring and Audit Manual (Updated EM&A Manual) was prepared in October 2002 to include the latest EM&A requirements in accordance with the information and recommendation described in the T3 Environmental Review Report (ERR) which was completed in April 2002. The Updated EM&A Manual was subsequently approved by the Environmental Protection Department (EPD) in October 2003.
- 1.3 The works of the Project will be constructed under the Project Proponent’s construction Contract No. ST 79/02 “Road T3 and Associated Roadworks”, which was commenced on 26th March 2003. The commencement date of construction of the Project was scheduled to 5th June 2003. MBH Joint Venture, a joint venture company formed by Maeda Corporation, Barbican Construction Company Ltd. and Hsin Chong Construction Company Ltd. is the Contractor for TDD Contract ST 79/02.
- 1.4 Cinotech Consultants Limited was commissioned by the Project Proponent to undertake the Environmental Monitoring and Audit (EM&A) works for “Sha Tin New Town, Stage II – Environmental Team (ET) for Road T3 and Associated Roadworks”. Dr. Priscilla CHOY of Cinotech Consultants Ltd. was appointed as the ET Leader under Condition 2.1 of the EP. Mr. David YEUNG of CH2M-IDC Hong Kong Ltd. was first appointed as the IEC for Pre-Construction Stage the Project and Mr. FAN Kin Wing of Enpro Environmental Technologies Company Ltd. was appointed as the IEC for the Construction stage of the Project. This is the first Quarterly EM&A report summarizes the EM&A works for the Project between April 2003 and June 2003.

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 Project Proponent, 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 5.

Construction Programme and Synopsis of Work

- 2.2 The construction programme is presented in Appendix B. The site activities during the reporting period are summarized in Table 2.1.

Table 2.1 Summary of Works Undertaken in the Reporting Months

Item	Work Activity	Month		
		April 03	May 03	June 03
1.	Site clearance works	✓	✓	✓
2.	Site office erection	✓	✓	✓
3.	Tree felling works	✓	✓	✓
4.	Ground investigation works	-	✓	✓
5.	Demolition of asbestos containing structures	-	✓	✓

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The Updated EM&A Manual designated locations for the ET to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. The Project area and monitoring locations are depicted in Figures 2, 3 and 4. Appendix C gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

- 3.2 Monitoring works/equipment were conducted/calibrated regularly in accordance with the Updated EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly EM&A 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 Updated EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix H.

4. MONITORING RESULTS

Weather Conditions

- 4.1 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

- 4.2 Dust monitoring started in June 2003 as the commencement date of construction of the Project was 5th June 2003.
- 4.3 All 1-hour TSP monitoring was conducted as scheduled except 9th, 12th and 13th June 2003. Due to the rainstorm, the monitoring work at AQ1 and AQ2 on 9th June 2003 was postponed to 10th June 2003, the monitoring work at all stations on 12th June 2003 was cancelled, and monitoring work at AQ1 on 13th June 2003 was cancelled.
- 4.4 All 24-hour TSP monitoring was conducted as scheduled.
- 4.5 The monitoring data of 1-hour and 24-hour TSP Levels are attached in the appendices of the Monthly Report for June 2003. The graphical presentations of the monitoring results are shown in Appendix E.

1-hour TSP

- 4.6 All measured 1-hour TSP levels during daytime were below the Action/Limit Levels in the reporting period.

24-hour TSP

- 4.7 All 24-hour TSP monitoring results in the reporting quarter were all below the Action/Limit Levels.

Noise

- 4.8 Besides 6 noise monitoring stations in the Updated EM&A Manual, an additional noise monitoring site, N7, was proposed and confirmed in the meeting held on 19th May 2003. Pre-construction noise monitoring at N7 was conducted between 21st May 2003 and 3rd June 2003. The monitoring data are attached in the appendices of the Monthly EM&A Report for June 2003. The graphical presentations of the monitoring results are shown in Appendix F.
- 4.9 Noise monitoring was performed at seven designated locations during the daytime period (0700 to 1900) as scheduled except that monitoring work on 12th June 2003 was cancelled due to adverse weather. The noise monitoring data are attached in the appendices of the Monthly Report for June 2003. The graphical plots of the noise monitoring results in this reporting quarter are shown in Appendix F.
- 4.10 One Action Level exceedance (complaint) was raised by a resident living at Holford Garden on 21st May 2003 (Refer to Section 7 for details).
- 4.11 One Limit Level exceedance was recorded at monitoring station N4 on 18th June 2003. However, no direct evidence shown that the exceedance was due to the Project works and the

exceedance was considered invalid. The summary of exceedance report is attached in Appendix K.

Water Quality

- 4.12 There was no discharge from the construction sites to the nearby surface channel to the Shing Mun River in this reporting quarter. Water quality monitoring works were conducted at the two designated control points (C1 and C2) only as scheduled. The water quality monitoring data are attached in the appendices of the Monthly Report for June 2003. The graphical plots of the water quality monitoring results in this reporting quarter are shown in Appendix G.
- 4.13 No Action/Limit Level exceedance was recorded in the reporting quarter.

5. AUDIT RESULTS

Implementation Status of Environmental Mitigation Measures

5.1 The implementation schedule of environmental mitigation measures (EMIS) is given in Appendix H.

Site Audit Summary

5.2 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations are summarized in Table 5.1.

Table 5.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations	Remedial Actions
Air Quality	22 Apr 03	The excavated materials were not covered at Site J2	The Contractor indicated that they would cover the materials with tarpaulin sheeting.
	29 Apr 03	Dusty materials were generated from backhoe works at Luk Hop Village.	The backhoe was removed offsite.
	10 Jun 03	The wheel washing bay was under-construction at Portion J2	-
	17 Jun 03 24 Jun 03	Vehicle wheel washing was noticed at Portion J2.	-
	24 June 03	The entrance of Portion J2 should be cleaned up more frequently.	-
Noise	Whole period	No violation was observed.	-
Water Quality	29 Apr 03	Due to the damage of watermain, muddy water was runoff into the drainage channel at Site J2	The damaged pipe was repaired and the clearance of soil was carried out.
	13 May 03	Stagnant water was observed at Luk Hop Village.	Stagnant water was removed.
	20 May 03	Stagnant water accumulated inside the drip tray near the site office.	Following up the last audit, stagnant water inside the drip tray has been cleared near the site office (Heung Fan Liu Street).
	10 Jun 03	Muddy water at Portion J2 was about to overflow into Holford Garden.	Following up the last audit, muddy water had been cleared in the audit session on 17 th June 2003.
	17 Jun 03	Vehicle wheel washing water flowed into the public drain directly.	No reoccurrence was observed in subsequent site inspection on 24 th June 03.
	24 June 03	Stagnant water accumulated inside the drip tray at Heung Fan Liu Street.	-

Parameters	Date	Observations	Remedial Actions
Chemical and Waste Management	15 Apr 03	Some waste oil drums and batteries were found at Luk Hop Village.	The drums and batteries had been removed by the audit session on 22 nd April 2003.
	22 Apr 03	Rubbish accumulated in the drainage channel at Luk Hop Village.	The Contractor indicated that they would clear up the rubbish though the rubbish was deposited by the previous occupiers of the area.
	29 Apr 03	C&D materials were not covered properly and accumulated at Luk Hop Village	The C&D was entirely covered with tarpaulin sheeting.
	6 May 03	Some chemical wastes (e.g. empty container) was placed on the bared ground at Site J2.	A designated area located at the work areas at Heung Fan Liu Street was established for the temporary storage of chemical waste. The said empty plastic lubricating oil container was removed to the designated area.
	13 May 03	Rubbish accumulated inside the drainage channel at Pak Shek Tsuen.	Rubbish was removed.
		An oil tank was placed on the bared ground and oil dripped on the bared ground at Site J2.	Oil tank was removed.
	20 May 03	A chemical drum was not placed on the drip tray near the site office	A drip tray was provided to the chemical drum at the work area at Heung Fan Liu Street.
	17 Jun 03	No drip tray was provided for power generator and drilling meters.	-
		Cement was placed improperly.	-
	24 Jun 03	Oil stain on the bare ground was observed at Heung Fan Liu Street.	-

Status of Environmental Licensing and Permitting

- 5.3 Environmental license and permit including Environmental Permit for the Project was in place and valid during the reporting quarter. A summary status of license and permit is given in Appendix I.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

- 6.1 All measured 1-hour and 24-hour TSP levels were below Action/Limit Levels in the reporting period.
- 6.2 One Action Level exceedance (complaint) was raised by a resident living at Holford Garden on 21st May 2003 (Refer to Section 7 for details).
- 6.3 One Limit Level exceedance was recorded at monitoring station N4 on 18th June 2003. However, no direct evidence showed that the exceedance was due to the Project works and the exceedance was considered invalid. The summary of exceedance report is attached in Appendix K.

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

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

Summary of Actions Taken

- 6.5 In this reporting quarter, the following mitigation measures were implemented:
- 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 under-construction.

7. ENVIRONMENTAL COMPLAINTS

Complaints Log

- 7.1 Appendix J summarizes the complaints received since the Project commencement.
- 7.2 One complaint related to the Project works was reported on 21st May 2003. The complaint, which was transferred by the Environmental Protection Department (EPD) to Environmental Team (ET) on 22nd May 2003, was concerning tree cutting activities near South East of Tai Wai New Village. Complaint investigation was carried out by ET and a complaint investigation report was submitted to EPD and ER on 27th May 2003. A copy of the complain investigation report was attached in the EM&A Monthly Report for May 2003
- 7.3 One public enquiry was received by TDD on 21st May 2003 and TDD subsequently referred the enquiry to the Environmental Team (ET) Leader of the Project on 23rd May 2003. The complaint was about the traffic noise and dust problem after the tree felling and site clearance in the site adjacent to Holford Garden. Investigation was carried out by ET and an investigation report was submitted to TDD and ER on 5th June 2003. A copy of the complaint investigation report was attached in the EM&A Monthly Report for June 2003.

8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 All complaints have been handled in accordance with the Updated EM&A Manual. The implementation status of the complaint handling procedure is summarized in Appendix J Complaint Log.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Excavation works, site clearance works, site formation works, demolition of asbestos containing materials will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on dust and noise due to earthworks as well as potential surface runoff in rainy season.

Table 2.1 Summary of Works Undertaken in the Reporting Months

Item	Work Activity	Month		
		April 03	May 03	June 03
1.	Site clearance works	✓	✓	✓
2.	Site office erection	✓	✓	✓
3.	Tree felling works	✓	✓	✓
4.	Ground investigation works	-	✓	✓
5.	Demolition of asbestos containing structures	-	✓	✓

Table 5.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations	Remedial Actions
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	29 Apr 03	Dusty materials were generated from backhoe works at Luk Hop Village.	The backhoe was removed offsite.
	10 Jun 03	The wheel washing bay was under-construction at Portion J2	-
	17 Jun 03 24 Jun 03	Vehicle wheel washing was noticed at Portion J2.	-
	24 June 03	The entrance of Portion J2 should be cleaned up more frequently.	-
Noise	Whole period	No violation was observed.	-
Water Quality	29 Apr 03	Due to the damage of watermain, muddy water was runoff into the drainage channel at Site J2	The damaged pipe was repaired and the clearance of soil was carried out.
	13 May 03	Stagnant water was observed at Luk Hop Village.	Stagnant water was removed.
	20 May 03	Stagnant water accumulated inside the drip tray near the site office.	Following up the last audit, stagnant water inside the drip tray has been cleared near the site office (Heung Fan Liu Street).
	10 Jun 03	Muddy water at Portion J2 was about to overflow into Holford Garden.	Following up the last audit, muddy water had been cleared in the audit session on 17 th June 2003.
	17 Jun 03	Vehicle wheel washing water flowed into the public drain directly.	No reoccurrence was observed in subsequent site inspection on 24 th June 03.
	24 June 03	Stagnant water accumulated inside the drip tray at Heung Fan Liu Street.	-

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	22 Apr 03	Rubbish accumulated in the drainage channel at Luk Hop Village.	The Contractor indicated that they would clear up the rubbish though the rubbish was deposited by the previous occupiers of the area.
	29 Apr 03	C&D materials were not covered properly and accumulated at Luk Hop Village	The C&D was entirely covered with tarpaulin sheeting.
	6 May 03	Some chemical wastes (e.g. empty container) was placed on the bared ground at Site J2.	A designated area located at the work areas at Heung Fan Liu Street was established for the temporary storage of chemical waste. The said empty plastic lubricating oil container was removed to the designated area.
	13 May 03	Rubbish accumulated inside the drainage channel at Pak Shek Tsuen.	Rubbish was removed.
		An oil tank was placed on the bared ground and oil dripped on the bared ground at Site J2.	Oil tank was removed.
	20 May 03	A chemical drum was not placed on the drip tray near the site office	A drip tray was provided to the chemical drum at the work area at Heung Fan Liu Street.
	17 Jun 03	No drip tray was provided for power generator and drilling meters.	-
		Cement was placed improperly.	-
	24 Jun 03	Oil stain on the bare ground was observed at Heung Fan Liu Street.	-