


Barbican Construction Co. Ltd.

DSD Contract No. DC/2000/19

**Regulation of Shenzhen River Stage III Phase I
Reprovisioning of Border Road and Fence at Yuen
Leng Chai and Man Kam To**

**Environmental Monitoring and Audit
Quarterly Report
(Version 01)**

March – May 2003

Verified By	 (Environmental Team Leader)
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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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TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY	1
ENVIRONMENTAL MONITORING WORKS	1
ENVIRONMENTAL COMPLAINT AND PROSECUTION.....	1
ENVIRONMENTAL LICENSING AND PERMITTING.....	1
FUTURE KEY ISSUES	2
1. INTRODUCTION.....	3
PROJECT ORGANIZATION AND CONTACTS OF KEY MANAGEMENT	3
CONSTRUCTION PROGRAMME AND SYNOPSIS OF WORK	4
2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS.....	4
MONITORING PARAMETERS AND MONITORING LOCATIONS	4
MONITORING METHODOLOGY AND CALIBRATION DETAILS	4
ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS).....	4
ENVIRONMENTAL MITIGATION MEASURES	4
3. MONITORING RESULTS.....	5
WEATHER CONDITIONS	5
AIR QUALITY	5
NOISE	5
4. AUDIT RESULTS.....	6
SITE AUDITS.....	6
STATUS OF ENVIRONMENTAL LICENSING AND PERMITTING.....	6
5. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS).....	7
SUMMARY OF EXCEEDANCES.....	7
REVIEW OF THE REASONS FOR AND THE IMPLICATIONS OF NON-COMPLIANCE	7
SUMMARY OF ACTIONS TAKEN.....	7
6. ENVIRONMENTAL COMPLAINTS	8
COMPLAINTS LOG.....	8
7. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS	8
8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS	8

LIST OF TABLES, FIGURES, AND APPENDICES

TABLES:

Table 2.1 Summary of Works Undertaken in the Reporting Months

FIGURES:

Figure 1 Layout Plan and locations of Monitoring Stations

APPENDICES:

Appendix A Contact Details of the Project Organisation
Appendix B Monitoring Requirements
Appendix C Environmental Quality Performance (Action/Limit) Levels
Appendix D Event Action Plans
Appendix E Graphical Presentation of Air Quality Monitoring Results
Appendix F Graphical Presentation of Noise Monitoring Results
Appendix G Summary Status of Environmental Licences and Permits
Appendix H Summary of Exceedances

EXECUTIVE SUMMARY

This is the second Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Regulation of Shenzhen River Stage III Phase I – Re-provisioning of Border Road and Fence At Yuen Leng Chai and Man Kam To” (the Project). This summary report presents EM&A work performed in the period between 26 February 2003 and 25 May 2003.

The construction activities undertaken in the reporting quarter were:-

- Site clearance works;
- Construction of concrete pipe;
- Excavation and compaction for road embankment;
- Excavation and construction for reinforced fill wall;
- Relocation of fencing;
- Construction of box culvert;
- E&M work; and
- Erection of fencing.

Environmental Monitoring Works

Environmental monitoring for the Project was performed regularly as stipulated in the 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

1-hour TSP Monitoring

All 1-hour TSP monitoring was conducted as scheduled. One Limit Level exceedance was recorded at monitoring station IM1A (A village house near Lo Wu KCRC Station) on 22nd April 2003. As there was no direct evidence showing that the exceedance was due to the construction activities under Contract No. DC/2000/19, the exceedance was considered to be invalid.

24-hour TSP Monitoring

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

Construction Noise

All construction noise monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded during the reporting quarter.

Environmental Complaint and Prosecution

No environmental complaint and prosecution was received during the reporting quarter.

Environmental Licensing and Permitting

License/Permits granted to the Project include the Environmental Permit (EP) for the Project, Waste Disposal (Chemical Waste) License and Construction Noise Permit.

Future Key Issues

Major construction site activities for the coming quarter include:

- E&M works at Portion E;
- Construction of Box Culvert B (Stage III);
- Erection of temporary fencing at portion F;
- Compaction for embankment;
- Construction of Reinforced Fill Wall 2, 3 and 4; and
- Excavation of fish pond at Portion A.

The anticipated environmental impact will be mainly on dust and noise due to excavation works.

1. INTRODUCTION

- 1.1 Cinotech Consultants Limited (hereinafter called the “ET”) was commissioned by Barbican Construction Co., Ltd. (hereinafter called the "Contractor") to undertake the Environmental Monitoring and Audit (EM&A) works for the Project “Shenzhen River Regulation Project Stage III Phase I – Re-provisioning of Border Road and Fence at Yuen Leng Chai and Man Kam To” (the Project).
- 1.2 The scope of the works in the project comprises:-
- Re-provisioning of border road and border fence;
 - Re-construction and re-surfacing of existing border road;
 - Ancillary road and drainage works; and
 - Landscaping works.
- 1.3 The Project is the Phase I of the Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449) and an environmental impact assessment report titled “Shenzhen River Regulation Project Stage III, Environmental Impact Assessment (EIA) Study” (Register No. AEIAR – 035/2000) has been approved and deposited with Environmental Protection Department (EPD). An Environmental Permit (EP) No. EP-078/2000/B has been issued by EPD for the construction of the proposed works under the Project.
- 1.4 Figure 1 shows the layout plan of the Project. The works have been commenced under DSD Contract No. DC/2000/19. Under the requirements of Conditions 5 of the EP, EM&A programme as set out in the EM&A Manual, environmental monitoring of air quality and noise are required for the construction phase of the project.
- 1.5 Barbican Construction Co., Ltd. was awarded for the project as the Contractor. This is the Second quarterly EM&A report summarizes the impact EM&A works for the Project between 26th February 2003 and 25th May 2003 (25th of each month as the cut-off day).

Project Organization and Contacts of Key Management

- 1.6 An organization structure and the line of communication were set up for the Project between the Engineer/Engineer Representative (ER), the Contractor and Environmental Team (ET). The contact details of the project are shown in Appendix A.

Construction Programme and Synopsis of Work

1.7 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	2003		
		March	April	May
1.	Site clearances works	√	-	-
2.	Construction of concrete pipe	√	√	-
3.	Excavation and compaction for road embankment	√	√	√
4.	Relocation of fencing	√	-	-
5.	Construction of box culvert	√	√	√
6.	Excavation and Construction for reinforced fill wall	√	√	√
7.	E&M work	-	√	√
8.	Erection of fencing	√	√	√

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates 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 Figure 1. Appendix B gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

2.2 Monitoring works/equipment were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

2.3 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 C.

Environmental Mitigation Measures

2.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to adopt.

3. MONITORING RESULTS

Weather Conditions

- 3.1 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

1-hour TSP

- 3.2 One Limit Level exceedance was recorded at monitoring station IM1A on 22nd April 2003. An overview of the exceedance including the action taken in accordance with the Event Action Plan is provided in Appendix H. The ET considered the exceedance was not due to the works under Contract No. DC/2000/19 because no major construction activity was undertaken near station IM1A during the day of exceedance recorded. The exceedance recorded at IM1A may be due to the construction activities on Shenzhen side near the station.

24-hour TSP

- 3.3 All 24-hour TSP monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded during the reporting quarter.

Noise

- 3.4 All Construction noise monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded during the reporting quarter.

4. AUDIT RESULTS

Site Audits

Air Quality

- 4.1 During the reporting quarter, it was observed that road traffic dust emission was occasionally generated by vehicles traveling on the haul/unpaved roads. The contractor was recommended to spray water more frequently.
- 4.2 During the reporting quarter, muddy water was occasionally observed inside the wheel washing bay. The contractor was recommended to desilt the wheel washing bay and recharge with clear water regularly.

Chemical and Waste Management

- 4.3 It was occasionally observed that a oil drum was placed on the bare ground within the site area. The contractor was recommended to provide a drip tray or other alternative to avoid oil spillage or dripping on the ground.
- 4.4 During the site inspections, it was observed that some chemical drums and generators were placed on bare ground. The Contractor had provided a drip tray for chemical drums and a generator storage on 10th April 2003.
- 4.5 On 22nd May 2003, oil dripping onto the ground from a drip tray at portion F near the earth pit E was observed. The contractor had rectified the situation after the site audit session.

Status of Environmental Licensing and Permitting

- 4.6 Environmental licenses and permits including Environmental Permit for the Project, Construction Noise Permit and Waste Disposal (Chemical Waste) License were in place and valid during the reporting quarter. A summary status of licenses and permits is given in Appendix G.

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

Summary of Exceedances

- 5.1 All 1-hour TSP monitoring was conducted as scheduled. One Limit Level exceedance was recorded at monitoring station IM1A on 22nd April 2003. As there was no direct evidence showing that the exceedance was due to the construction activities under Contract No. DC/2000/19, the exceedance was considered to be invalid.

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

- 5.2 The limit level exceedance of 1-hr TSP at IM1A was considered not due to the works under Contract No. DC/2000/19 because no major construction activity was undertaken near station IM1A during the reporting quarter. The exceedance may be due to the construction activities on Shenzhen side near the station IM1A. The exceedance was considered to be invalid.

Summary of Actions Taken

- 5.3 In this reporting quarter, the following mitigation measures were implemented:
- Drip trays for oil storage of oil buckets have been provided; and
 - The oil dripping from a drip tray has been rectified.

6. ENVIRONMENTAL COMPLAINTS

Complaints Log

- 6.1 No environmental complaint against the Project works was received during the reporting period.

7. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 7.1 No notification of summons and successful prosecutions were recorded during the reporting quarter.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 8.1 Works area set up, excavation works, and drainage pipe and toe wall construction were the major construction activities undertaken during the reporting quarter. No significant impact on air quality and noise was identified.

Table 2.1 Summary of Works Undertaken in the Reporting Months

Item	Work Activity	2003		
		March	April	May
1.	Site clearances works	√	-	-
2.	Construction of concrete pipe	√	√	-
3.	Excavation and compaction for road embankment	√	√	√
4.	Relocation of fencing	√	-	-
5.	Construction of box culvert	√	√	√
6.	Excavation and Construction for reinforced fill wall	√	√	√
7.	E&M work	-	√	√
8.	Erection of fencing	√	√	√