

**Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and
Tai Po Road (Contract No. ST 77/01)**

**Monthly Environmental Monitoring & Audit Report –
August 2003**

Checked in accordance with EML QP22
Environmental Team Leader


A handwritten signature in black ink, appearing to be 'Peter C', written over a horizontal line.

Table of Contents

1.	INTRODUCTION	1
1.1	BACKGROUND	1
2.	ENVIRONMENTAL STATUS	3
2.1	AIR QUALITY.....	3
2.1.1	Monitoring Requirements	3
2.1.2	Monitoring Locations	3
2.1.3	Summary of Monitoring Results	3
2.2	NOISE	6
2.2.1	Monitoring Requirements	6
2.2.2	Monitoring Locations	6
2.2.3	Summary of Monitoring Results	6
3.	ENVIRONMENTAL AUDIT	9
3.1	GENERAL	9
3.2	ASSESSMENT OF ENVIRONMENTAL MONITORING RESULTS	9
3.3	ENVIRONMENTAL COMPLAINTS	10
3.4	ASSESSMENT OF MITIGATION MEASURES.....	10
4.	FUTURE KEY ISSUE AND RECOMMENDATION	12

Appendix A	Action and Limit Levels
Appendix B	Tentative Schedule for Impact Air Quality and Noise Monitoring
Appendix C	24-Hour TSP Impact Monitoring Results and Plots
Appendix D	1-Hour TSP Impact Monitoring Results and Plots
Appendix E	Daytime 0700-1900Hrs Impact Noise Monitoring Results and Plots
Appendix F	Weather Conditions During Monitoring Periods
Appendix G	Event and Action Plan for Air Quality and Noise
Appendix H	Project Organisation and Contacts of Key Personnel
Appendix I	Summary Records of Complaints Received
Appendix J	Updated Construction Program

List of Tables

Table 2.1	Air Quality Monitoring Locations
Table 2.2	Summary of 24 and 1-hour TSP Monitoring Results
Table 2.3	Noise Monitoring Locations
Table 2.4	Summary of Noise Monitoring Results
Table 3.1	Summary of Site Inspection during the Reporting Period
Table 3.2	Summary of Environmental Monitoring
Table 3.3	Environmental Complaints / Enquiry Received for the Reporting Month
Table 3.4	Summary of Total Number of Complaints Received to Date
Table 3.5	Summary of Major Mitigation Measures at the Site

List of Figure

Figure 1.1	Project Area
Figure 2.1	Air Quality Monitoring Locations
Figure 2.2	Noise Monitoring Locations

EXECUTIVE SUMMARY

The impact environmental monitoring report was prepared by Environmental Management Limited (EML) for Environmental Monitoring & Audit (EM&A) Services of Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and Tai Po Road. This report discusses the EM&A services that had been carried out in August 2003.

Environmental monitoring for this Project included both air quality and noise measurements. The parameters measured for air quality are 24-hour and 1-hour Total Suspended Particulate (TSP) while for noise monitoring, the A-weighted continuous sound pressure level (L_{eq}) as well as percentile levels (L_{10} and L_{90}) were measured.

Over the reporting period, all monitored 24-hour TSP, 1-hour TSP and noise ($L_{eq}(5min)$) monitoring data were below the AL Levels and no remedial actions as listed in the Event and Action Plan (**Appendix G**) were required.

The major construction activities in this reporting period included:

- Construction of Bridge A, B and C, including pile caps (Bridge B and C), abutment walls (Bridge A, B and C), H piles (Bridge B and C), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 7, 8 and 12;
- Noise barrier construction, including bore piles for noise barrier No 1 and excavation for barrier No. 4B;
- Box culvert extension, including the construction of 1500 diameter pipe;
- Underground drainage and utilities near Lok Shun Path Roundabout;
- Construction of staircase 2 and 8.

Regular site inspection was conducted in this reporting month and the mitigation measures, as discussed in the relevant documents, were assessed.

During the site inspections in the reporting month, it was noted that most of the stagnant water were removed on the site especially at time after rainfall event. Meanwhile, the construction wastes identified in the previous reporting month were properly disposed of.

However, due to some heavy showers during the month, it was noted from site inspection that part of the temporary drainage near Retaining Wall 12 was filled with sediments. As a result, the drainage in the area may not be effective in particular during rainfall events. The Contractor was therefore instructed to remove the sediments and provide regular maintenance to the drainage area. Meanwhile, rubbish and construction wastes were observed at parts of the construction site and in order to improve site tidiness, the Contractor was asked to remove and properly dispose the wastes.

1. INTRODUCTION

1.1 Background

Environmental Management Limited (EML) was appointed by Maunsell Consultants Asia Ltd. as the Environmental Specialist for the project *Sha Tin New Town, Stage II Road Linking Lok Shun Path and Tai Po Road* (Contract No. ST 77/01).

The responsibilities of the Environmental Team included:

- Monitor the noise and air quality data as required in the Environmental Monitoring and Audit (EM&A) Manual;
- Analyse the monitoring data and review the success of EM&A program to cost effectively confirm the adequacy of mitigatory measures implemented and validity of the Environmental Impact Assessment Study predictions and to identify any adverse environmental impacts arising;
- Carry out site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and anticipate environmental issues for proactive action before problems arise;
- Review the proposal for mitigation measures submitted by Contractor in accordance with Event and Action Plans;
- Propose any improvement or other alternative mitigation measures should Contractor's proposal be found to be inadequate;
- Adhere to the procedures for carrying out complaint investigation;
- Audit and prepare EM&A reports on environmental monitoring data and site environmental conditions and;
- Report on EM&A results to Engineer, the ER and EPD.

This is the monthly EM&A report for August 2003. This monthly report describes the results of the impact air quality and noise monitoring works in the reporting period as well as the environmental status and issues of Road D15 Construction Site. In addition, if required, any remedial/follow-up actions undertaken as a result of non-compliance with relevant environmental criteria or complaints related to Road D15 Construction Site would also be discussed.

The project area of Road D15 Construction Site is shown in **Figure 1.1**.

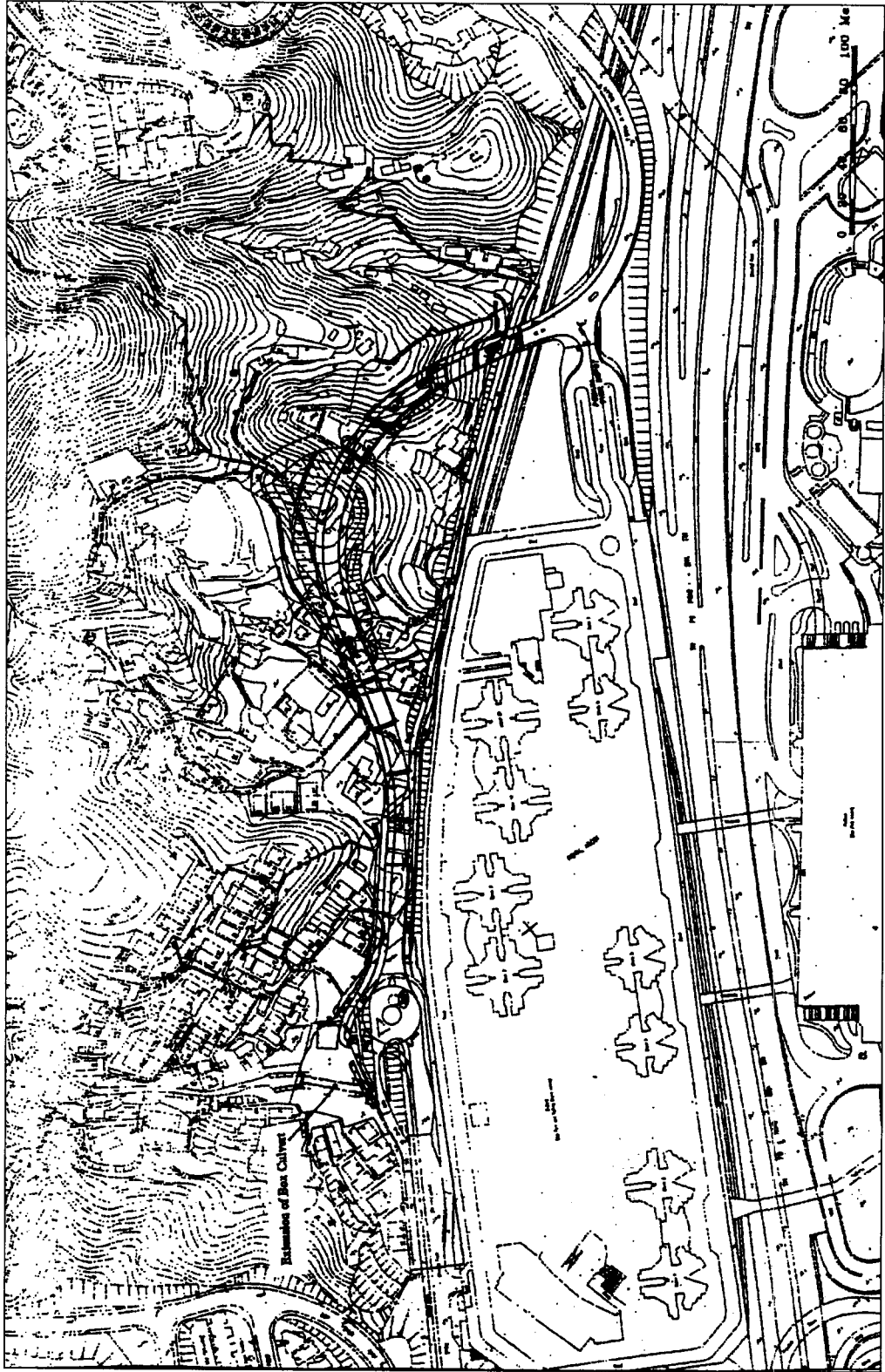


Figure 1.1 Project Area

2. ENVIRONMENTAL STATUS

2.1 Air Quality

2.1.1 Monitoring Requirements

In accordance with the EM&A Manual, air quality impact monitoring was conducted in terms of 1-hour and 24-hour TSP at the designated monitoring locations.

Continuous 24-hour TSP monitoring was performed once in every six days while 1-hour TSP monitoring was performed 3 times in every 6 days. The Action and Limit (AL) levels for air quality is attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

2.1.2 Monitoring Locations

The designated impact air quality monitoring stations are listed in **Table 2.1** and are shown in **Figure 2.1**.

Table 2.1 Air Quality Monitoring Locations

Monitoring Station	Location
A1	Village house at Lok Lo Ha Village
A2	Lok Lo Ha Village House No. 104
A3	Village House near Tsun King Road

2.1.3 Summary of Monitoring Results

In this report, the results for the impact air quality monitoring conducted in August 2003 at the three designated locations were evaluated. **Table 2.2** summarises the ranges and mean of the 24-hour and 1-hour TSP monitoring results carried out in the reporting period. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix C** and **D**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

Table 2.2 Summary of 24 and 1-hour TSP Monitoring Results

Parameter	Monitoring Location	Mean TSP Levels ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	No. of Exceedance	
				Action Levels	Limit Levels
24 – hour TSP	A1	50.6	40 – 61	0	0
	A2	54.4	36 – 73	0	0
	A3	46.6	35 – 61	0	0
1 – hour TSP	A1	162.7	63 – 284	0	0
	A2	151.3	89 – 243	0	0
	A3	146.5	72 – 285	0	0

As can be seen from the table above, all measured 24-TSP and 1-hour TSP monitoring data were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the monitoring were mainly sunny or cloudy, except some precipitations were recorded on 22 August. From field logs, the major dust sources during samplings near the designated stations included road dusts, vehicle emissions from traffic in Lok Shun Path and construction works at Road D15 Site. The major construction works carried out at Road D15 Site over the reporting period include construction of Bridge A, B

and C, retaining wall, noise barrier construction, box culvert extension, underground drainage and utilities and construction of staircase. Meanwhile, it was also observed that there were construction activities carried out by sites that were not related to this Project in the vicinity of the monitoring stations.

Comparing with the monitoring results from last month, the calculated mean 24-hour and 1-hour TSP levels at all stations were generally higher in this reporting month except for the mean 24-hour TSP at Station A1. The highest TSP levels were recorded at Station A1 (1-hour TSP) with values of $162.7\mu\text{g}/\text{m}^3$ which was relatively higher than the levels recorded in July ($137.5\mu\text{g}/\text{m}^3$).



Figure 2.1 Air Quality Monitoring Locations

2.2 Noise

2.2.1 Monitoring Requirements

Impact noise monitoring was conducted once in every six days at the five designated monitoring locations in accordance with specifications in the EM&A Manual. The duration of sampling was 30 minutes. The Action and Limit levels for noise monitoring are attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

2.2.2 Monitoring Locations

The impact noise monitoring locations are presented in **Table 2.3** and shown in **Figure 2.2**.

Table 2.3 Noise Monitoring Locations

Monitoring Location	Measurement	Location
N1	Façade	Lok Lo Ha Village House No. 3B
N2	Façade	Lok Lo Ha Village House No. 32A
N3	Façade	Royal Ascot Block 9, Flat C
N4	Façade	Lok Lo Ha Village House No. 97
N5	Façade	Village near Royal Ascot

2.2.3 Summary of Monitoring Results

In this report, the results for the impact noise monitoring conducted in August 2003 at the five designated locations were evaluated. The monitoring results obtained are summarised in **Table 2.4** below. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix E**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

Table 2.4 Summary of Noise Monitoring Results

Parameter	Monitoring Location	Range of Results dB(A)	No. of Exceedance	
			Action Levels	Limit Levels
30-minute Noise Measurement (Leq)	N1	58.7 – 73.2	0	0
	N2	64.4 – 70.6	0	0
	N3	58.5 – 62.9	0	0
	N4	57.8 – 59.7	0	0
	N5	60.6 – 64.1	0	0

As shown in the table above, all noise monitoring data recorded were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the sampling were mainly sunny or cloudy except some precipitations were recorded on 22 August, while all monitoring was conducted with wind speed of below 1.2 m/s. Traffic and construction activities were the major noise sources identified at the five monitoring locations. Meanwhile it was noted from field log that activities of cutting, hammering, breaking, drilling, welding, concreting and excavating, as well as operations of crane and dump truck were present in the vicinity of the monitoring stations during the monitoring.

Comparing with the monitoring results recorded in last reporting period, the range of measured noise level during this reporting month at all stations were similar. The highest level was recorded at Station N1 (73.2dB(A)) and occurred in the morning of 12 August. According to the field log, the major noise source at that time was operations of drilling, breaking and crane, as well as traffic on KCR.



Figure 2.2 Noise Monitoring Locations

3. ENVIRONMENTAL AUDIT

3.1 General

In the last monthly EM&A report, two environmental issues were raised:

- Stagnant water was occasionally observed on the site;
- Construction wastes were not properly stored for disposal.

It was noted from site inspections that most of the stagnant water were removed on the site especially at time after rainfall event. Meanwhile, the construction wastes identified in the previous reporting month were properly disposed of.

Table 3.1 summarises the date and type of site inspections carried out during the reporting period.

Table 3.1 Summary of Site Inspection during the Reporting Period

Date	Type of Inspection
06 August 2003 (Wednesday)	Regular Site Inspection
29 August 2003 (Friday)	Regular Site Inspection

Over the reporting period, the major construction work at the Site include:

- Construction of Bridge A, B and C, including pile caps (Bridge B and C), abutment walls (Bridge A, B and C), H piles (Bridge B and C), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 7, 8 and 12;
- Noise barrier construction, including bore piles for noise barrier No 1 and excavation for barrier No. 4B;
- Box culvert extension, including the construction of 1500 diameter pipe;
- Underground drainage and utilities near Lok Shun Path Roundabout;
- Construction of staircase 2 and 8.

3.2 Assessment of Environmental Monitoring Results

In this reporting month, there were no exceedance recorded for both impact air quality and noise monitoring. The monitoring result was discussed in **Section 2** of the report and are summarised in **Table 3.2** below

Table 3.2 Summary of Environmental Monitoring

Item	Parameter	Monitoring Period	Total No. of Samples Taken (on all stations)	No. of Exceedance	
				Action Levels	Limit Levels
1	24 – hour TSP	01/08/03 to 31/08/03	15	0	0
2	1 – hour TSP	01/08/03 to 31/08/03	45	0	0
3	30-minute Noise Measurement (Leq)	01/08/03 to 31/08/03	25	0	0

3.3 Environmental Complaints

No environmental complaints had been received by the Environmental Team against the construction site in this reporting month. **Table 3.3** shows the summary record for this reporting month while **Table 3.4** summarises the complaint statistics from the commencement of the Project to date. **Appendix I** listed the details of all the complaints received on the construction site.

Table 3.3 Environmental Complaints / Enquiry Received in the Reporting Month

Complaint No.	Received date & Time	Description (inc. location/nature of complaint)	Follow-up Action Taken	Recommended Mitigation Measures	Status/Remarks
N/a	N/a	N/a	N/a	N/a	N/a

Table 3.4 Summary of Total Number of Complaints Received to date

Total No. of Complaints to date	No. of Complaints in this reporting period	No. of Active Complaints	No. of Inactive/Closed Complaints
2	0	N/a	2

3.4 Assessment of Mitigation Measures

Table 3.5 presented the status of the major mitigation measures identified during site inspection.

Table 3.5 Summary of Major Mitigation Measures at the Site

Type	Mitigation Measure	Comments
Noise	Temporary purposed-built Noise Barrier	<ul style="list-style-type: none"> Constructed based on the design in the Construction Noise Mitigation Proposal.
Water	Wheel Washing Facility	<ul style="list-style-type: none"> Installed and in operation.
	Sand/Silt Removal Facilities	<ul style="list-style-type: none"> Wastewater treatment systems are installed to treat site-runoffs and water from piling works Another treatment system was installed to treat wastewater from piling works near Bridge C.
	Measures along stream-banks north-east of Lok Shun Path Roundabout	<ul style="list-style-type: none"> Concrete, sandbags, sump pits and pumps were placed/installed along the banks to prevent construction debris and site run-off from entering the stream untreated.
	Diversion of Stream Course via drainage pipe	<ul style="list-style-type: none"> Installed at the existing channel.
Wastewater	Water Reuse at wheel washing facility and site investigation drilling works.	Implemented
Land Contamination	Metal trays are placed underneath stationary machines where there are potential of oil leakage	Implemented
Air	Provide plastic sheeting covers on exposed soils	Implemented
	Regular water spraying on areas where there is likely generation of dust	Implemented
	Impervious sheeting was placed around the working area near monitoring station A1	Implemented

Due to some heavy showers during the month, it was noted from site inspection that part of the temporary drainage near Retaining Wall 12 was filled with sediments. As a result, the drainage in the area may not be effective in particular during rainfall events. The Contractor was therefore instructed to remove the sediments and provide regular maintenance to the drainage area. Meanwhile, rubbish and construction wastes were observed at parts of the construction sites and in order to improve site tidiness, the Contractor was asked to remove and properly dispose the wastes.

4. FUTURE KEY ISSUE AND RECOMMENDATION

There are two environmental issues that will need to be addressed in the next reporting month:

- Proper maintenance of the temporary drainage near Retaining Wall 12 and
- Proper storage and disposal of wastes and rubbish around the construction site;

The updated work program for the following months are attached in **Appendix J** while the monitoring tentative schedule for the next reporting month are attached in **Appendix B**.

APPENDIX A:

Action and Limit Levels

Action and Limit Levels for 24-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	156	260
A2	155	
A3	153	

Action and Limit Levels for 1-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	371	500
A2	378	
A3	368	

Action / Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hours on normal weekdays	When one documented complaint is received	75* dB(A)
0700-2300 hours on holidays; and 1900-2300 hours on all other days		60/65/70** dB(A)
2300- 0700 hours of next day		45/50/55** dB(A)

** to be selected based on Area Sensitivity Rating

Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

APPENDIX B:

**Tentative Schedule for Impact
Air Quality and Noise
Monitoring**

1. Tentative Schedule for Current Reporting Month – August 2003

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for Aug 2003

Aug-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Fri	x	x
2	Sat	x	x
3	Sun	x	x
4	Mon	x	x
5	Tue	9:30	8:00
6	Wed	x	09:50,11:00
7	Thu	x	x
8	Fri	x	x
9	Sat	x	x
10	Sun	x	x
11	Mon	9:30	8:00
12	Tue	x	09:50,11:00
13	Wed	x	x
14	Thu	x	x
15	Fri	9:30	8:00
16	Sat	x	x
17	Sun	x	x
18	Mon	x	09:00,11:00
19	Tue	x	x
20	Wed	x	x
21	Thu	9:30	8:00
22	Fri	x	09:50,11:00
23	Sat	x	x
24	Sun	x	x
25	Mon	x	x
26	Tue	x	x
27	Wed	9:30	8:00
28	Thu	x	09:50,11:00
29	Fri	x	x
30	Sat	x	x
31	Sun	x	x

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Noise Monitoring for Aug 2003

Aug-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Fri	x	x	x	x	x
2	Sat	x	x	x	x	x
3	Sun	x	x	x	x	x
4	Mon	x	x	x	x	x
5	Tue	x	x	x	x	x
6	Wed	09:50	10:25	13:00	11:15	09:00
7	Thu	x	x	x	x	x
8	Fri	x	x	x	x	x
9	Sat	x	x	x	x	x
10	Sun	x	x	x	x	x
11	Mon	x	x	x	x	x
12	Tue	09:50	10:25	13:00	11:15	09:00
13	Wed	x	x	x	x	x
14	Thu	x	x	x	x	x
15	Fri	x	x	x	x	x
16	Sat	x	x	x	x	x
17	Sun	x	x	x	x	x
18	Mon	09:50	10:25	13:00	11:15	09:00
19	Tue	x	x	x	x	x
20	Wed	x	x	x	x	x
21	Thu	x	x	x	x	x
22	Fri	09:50	10:25	13:00	11:15	09:00
23	Sat	x	x	x	x	x
24	Sun	x	x	x	x	x
25	Mon	x	x	x	x	x
26	Tue	x	x	x	x	x
27	Wed	x	x	x	x	x
28	Thu	09:50	10:25	13:00	11:15	09:00
29	Fri	x	x	x	x	x
30	Sat	x	x	x	x	x
31	Sun	x	x	x	x	x

2. Tentative Schedule for Next Reporting Month – September 2003

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for Sep 2003

Sep-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Mon	x	x
2	Tue	9:30	8:00
3	Wed	x	09:50,11:00
4	Thu	x	x
5	Fri	x	x
6	Sat	x	x
7	Sun	x	x
8	Mon	9:30	8:00
9	Tue	x	09:50,11:00
10	Wed	x	x
11	Thu	9:30	8:00
12	Fri	x	x
13	Sat	x	x
14	Sun	x	x
15	Mon	x	09:00,11:00
16	Tue	x	x
17	Wed	x	x
18	Thu	9:30	8:00
19	Fri	x	09:50,11:00
20	Sat	x	x
21	Sun	x	x
22	Mon	x	x
23	Tue	x	x
24	Wed	9:30	8:00
25	Thu	x	09:50,11:00
26	Fri	x	x
27	Sat	x	x
28	Sun	x	x
29	Mon	x	x
30	Tue	9:30	8:00

Sha Tin New Town, Stage II
 Road D15 Linking Lok Shun Path and Tai Po Road
 Tentative Time Schedule for Construction Phase Noise Monitoring for Sep 2003

Sep-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Mon	x	x	x	x	x
2	Tue	x	x	x	x	x
3	Wed	09:50	10:25	13:00	11:15	09:00
4	Thu	x	x	x	x	x
5	Fri	x	x	x	x	x
6	Sat	x	x	x	x	x
7	Sun	x	x	x	x	x
8	Mon	x	x	x	x	x
9	Tue	09:50	10:25	13:00	11:15	09:00
10	Wed	x	x	x	x	x
11	Thu	x	x	x	x	x
12	Fri	x	x	x	x	x
13	Sat	x	x	x	x	x
14	Sun	x	x	x	x	x
15	Mon	09:50	10:25	13:00	11:15	09:00
16	Tue	x	x	x	x	x
17	Wed	x	x	x	x	x
18	Thu	x	x	x	x	x
19	Fri	09:50	10:25	13:00	11:15	09:00
20	Sat	x	x	x	x	x
21	Sun	x	x	x	x	x
22	Mon	x	x	x	x	x
23	Tue	x	x	x	x	x
24	Wed	x	x	x	x	x
25	Thu	09:50	10:25	13:00	11:15	09:00
26	Fri	x	x	x	x	x
27	Sat	x	x	x	x	x
28	Sun	x	x	x	x	x
29	Mon	x	x	x	x	x
30	Tue	x	x	x	x	x

APPENDIX C:

**24-Hour TSP Impact
Monitoring Results and Plots**

1. 24-hour TSP Monitoring Results

Monitoring Station A1 (Lok Lo Ha Village House No. 3B)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
5-Aug-03	2.8566	2.9540	1.11	1.11	11897.14	11921.14	1440	61	Cloudy
11-Aug-03	2.8657	2.9376	1.11	1.11	11924.14	11948.14	1440	45	Cloudy
15-Aug-03	2.8481	2.9424	1.11	1.11	1951.14	1975.14	1440	59	Fine
21-Aug-03	2.8008	2.8731	1.11	1.11	1978.14	2002.14	1440	40	Rainy
27-Aug-03	2.8248	2.9011	1.11	1.11	2005.16	2029.16	1440	48	Sunny
							Min	40	
							Max	61	
							Average	50.6	

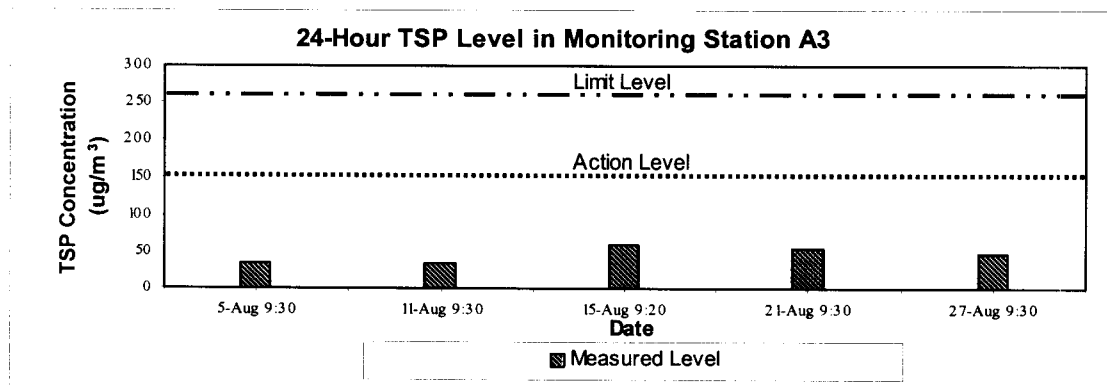
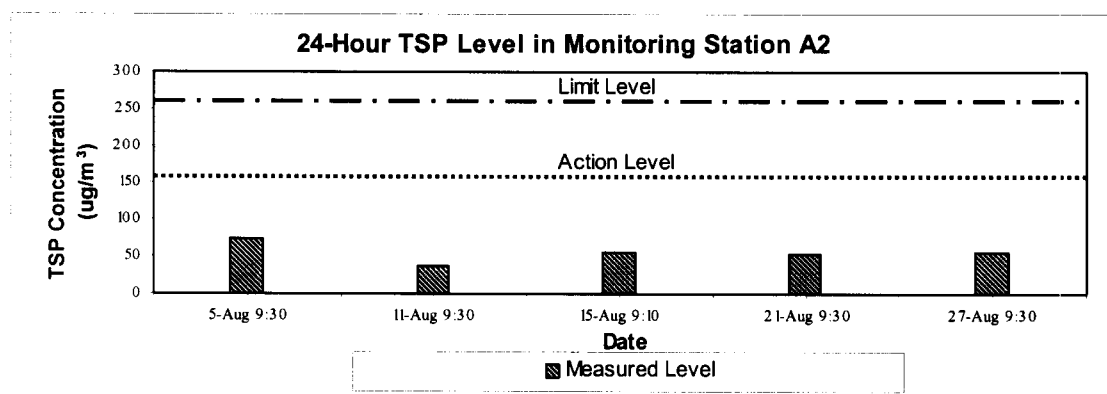
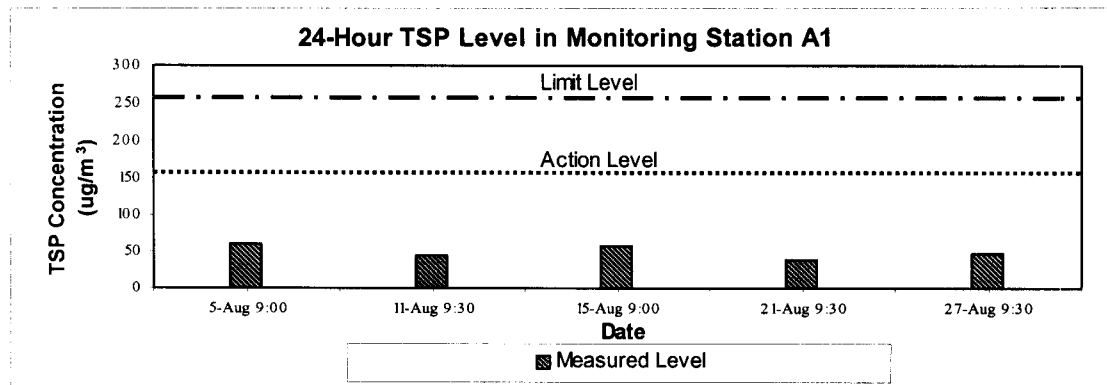
Monitoring Station A2 (Lok Lo Ha Village House No. 104)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
5-Aug-03	2.8407	2.9575	1.11	1.11	2570.72	2594.72	1440	73	Cloudy
11-Aug-03	2.8570	2.9147	1.11	1.11	2597.72	2621.72	1440	36	Cloudy
15-Aug-03	2.8556	2.9452	1.11	1.11	2624.72	2648.72	1440	56	Fine
21-Aug-03	2.8363	2.9273	1.11	1.11	2651.72	2675.72	1440	53	Rainy
27-Aug-03	2.8050	2.8914	1.11	1.11	2678.71	2702.71	1440	54	Sunny
							Min	36	
							Max	73	
							Average	54.4	

Monitoring Station A3 (Village House near Tsun King Road)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
5-Aug-03	2.8886	2.9452	1.11	1.11	11074.86	11098.86	1440	35	Cloudy
11-Aug-03	2.8684	2.9236	1.11	1.11	11101.86	11125.86	1440	35	Cloudy
15-Aug-03	2.8536	2.9510	1.11	1.11	11128.86	11152.86	1440	61	Fine
21-Aug-03	2.8018	2.8899	1.11	1.11	11166.06	11190.06	1440	55	Rainy
27-Aug-03	2.8507	2.9257	1.11	1.11	1193.07	1217.07	1440	47	Sunny
							Min	35	
							Max	61	
							Average	46.6	

2. Plots for 24-hour Monitoring Results



APPENDIX D:

**1-Hour TSP Impact
Monitoring Results and Plots**

1. 1-hour TSP Monitoring Results

Station A1 (Lok Lo Ha Village House No. 3B)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
5-Aug-03	0800 – 0900	273
6-Aug-03	0950 – 1050	110
6-Aug-03	1100 – 1200	155
11-Aug-03	0800 – 0900	179
12-Aug-03	0950 – 1050	110
12-Aug-03	1100 – 1200	80
15-Aug-03	0800 – 0900	234
18-Aug-03	0900 – 1000	129
18-Aug-03	1100 – 1200	164
21-Aug-03	0800 – 0900	219
22-Aug-03	0950 – 1050	96
22-Aug-03	1210 – 1310	206
27-Aug-03	0800 – 0900	284
28-Aug-03	0950 – 1050	138
28-Aug-03	1100 – 1200	63
Average		162.7
Min		63
Max		284

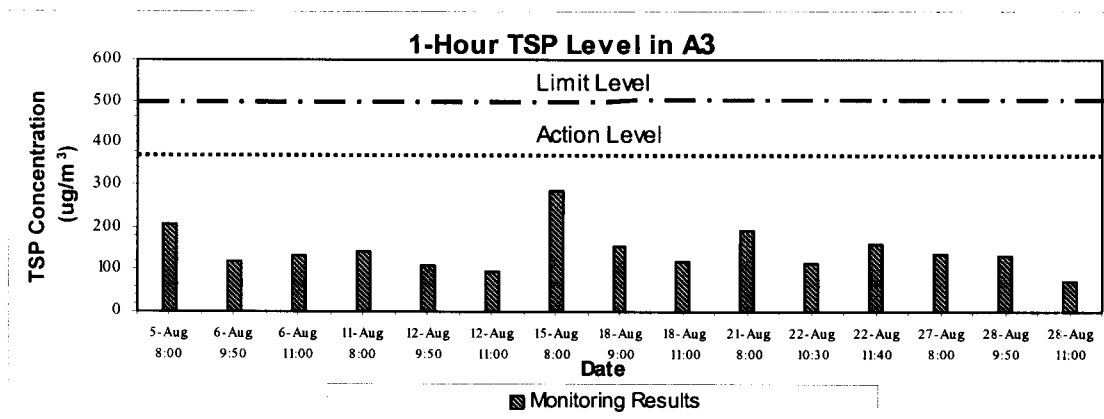
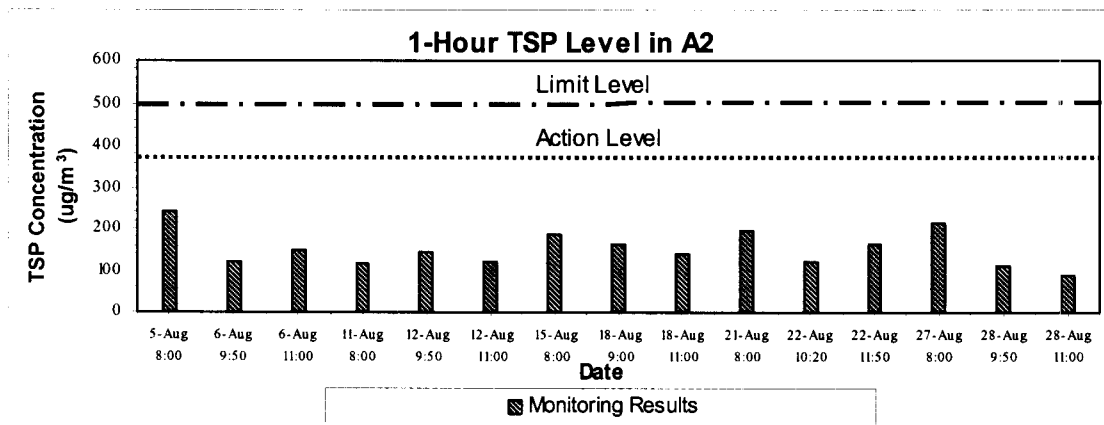
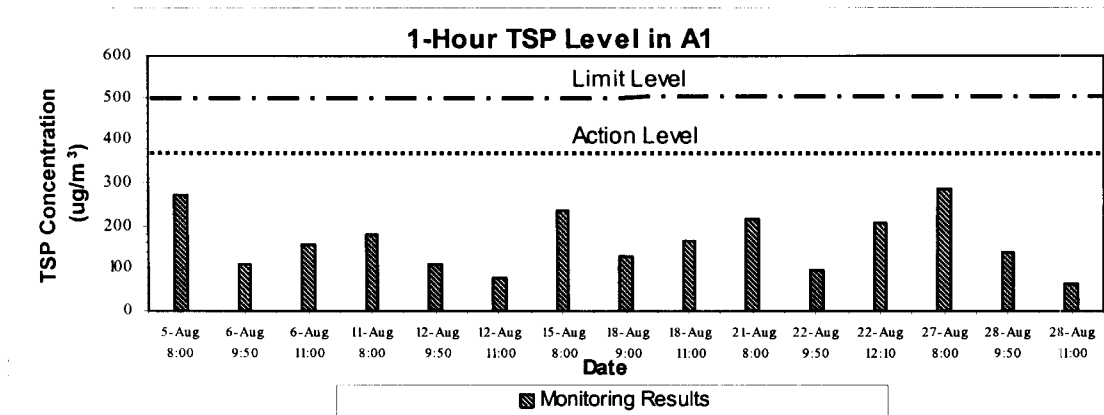
Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
5-Aug-03	0800 – 0900	243
6-Aug-03	0950 – 1050	122
6-Aug-03	1100 – 1200	149
11-Aug-03	0800 – 0900	116
12-Aug-03	0950 – 1050	146
12-Aug-03	1100 – 1200	120
15-Aug-03	0800 – 0900	186
18-Aug-03	0900 – 1000	162
18-Aug-03	1100 – 1200	138
21-Aug-03	0800 – 0900	195
22-Aug-03	1020 – 1120	119
22-Aug-03	1150 – 1250	162
27-Aug-03	0800 – 0900	213
28-Aug-03	0950 – 1050	110
28-Aug-03	1100 – 1200	89
Average		151.3
Min		89
Max		243

Station A3 (Village House near Tsun King Road)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
5-Aug-03	0800 – 0900	209
6-Aug-03	0950 – 1050	122
6-Aug-03	1100 – 1200	135
11-Aug-03	0800 – 0900	144
12-Aug-03	0950 – 1050	113
12-Aug-03	1100 – 1200	95
15-Aug-03	0800 – 0900	285
18-Aug-03	0900 – 1000	158
18-Aug-03	1100 – 1200	122
21-Aug-03	0800 – 0900	192
22-Aug-03	1030 – 1130	117
22-Aug-03	1140 – 1240	161
27-Aug-03	0800 – 0900	137
28-Aug-03	0950 – 1050	135
28-Aug-03	1100 – 1200	72
	Average	146.5
	Min	72
	Max	285

2. Plots of 1-hour TSP Monitoring Results



APPENDIX E:

**Daytime 07:00 -19:00Hrs
Impact Noise Monitoring
Results and Plots**

1. Noise Monitoring Results

Monitoring Station N1 (Lok Lo Ha Village House No.3B)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-Aug-03	0920 – 0950	68.5	69.8	64.1
12-Aug-03	0940 – 1010	73.2	76.4	68.1
18-Aug-03	1040 – 1110	68.7	71.7	58.4
22-Aug-03	1145 – 1215	58.7	61.3	54.8
28-Aug-03	1045 – 1115	62.1	63.8	59.1

Min	58.7	61.3	54.8
Max	73.2	76.4	68.1

Monitoring Station N2 (Lok Lo Ha Village House No.32A)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-Aug-03	1100 – 1130	70.6	73.7	65.5
12-Aug-03	1105 – 1135	68.7	71.6	61.8
18-Aug-03	1118 – 1148	68.4	72.2	60.5
22-Aug-03	1350 – 1420	64.4	68.8	58.5
28-Aug-03	1130 – 1200	66.5	70.0	58.9

Min	64.4	68.8	58.5
Max	70.6	73.7	65.5

Monitoring Station N3 (Royal Ascot Block 9, Flat C)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-Aug-03	1300 – 1330	60.8	64.3	57.3
12-Aug-03	1300 – 1330	62.9	65.4	59.6
18-Aug-03	1350 – 1420	59.0	60.8	52.1
22-Aug-03	1450 – 1520	58.5	61.0	51.1
28-Aug-03	1415 – 1445	61.7	64.5	54.0

Min	58.5	60.8	51.1
Max	62.9	65.4	59.6

Monitoring Station N4 (Lok Lo Ha Village House No.97)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-Aug-03	0955 – 1025	59.7	62.3	56.4
12-Aug-03	1025 – 1055	58.7	61.1	55.6
18-Aug-03	1450 – 1520	59.2	62.3	54.6
22-Aug-03	1310 – 1340	59.3	61.9	54.3
28-Aug-03	1315 – 1345	57.8	61.2	53.6

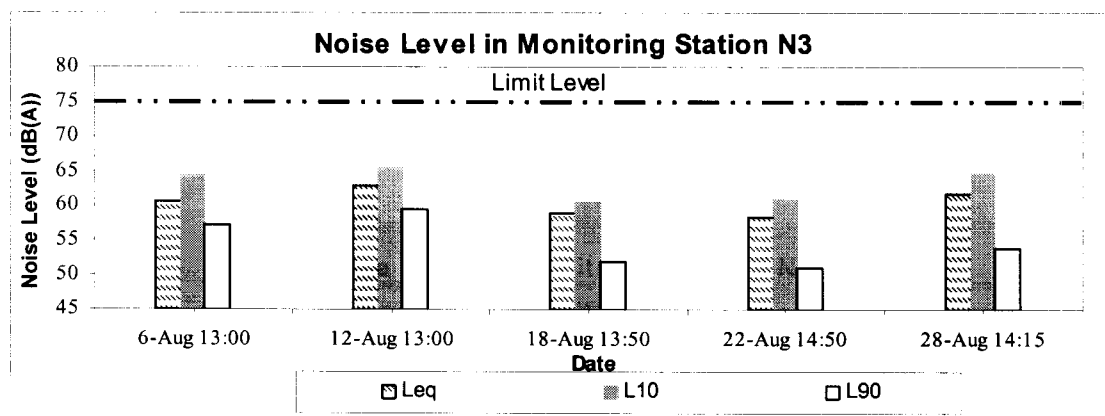
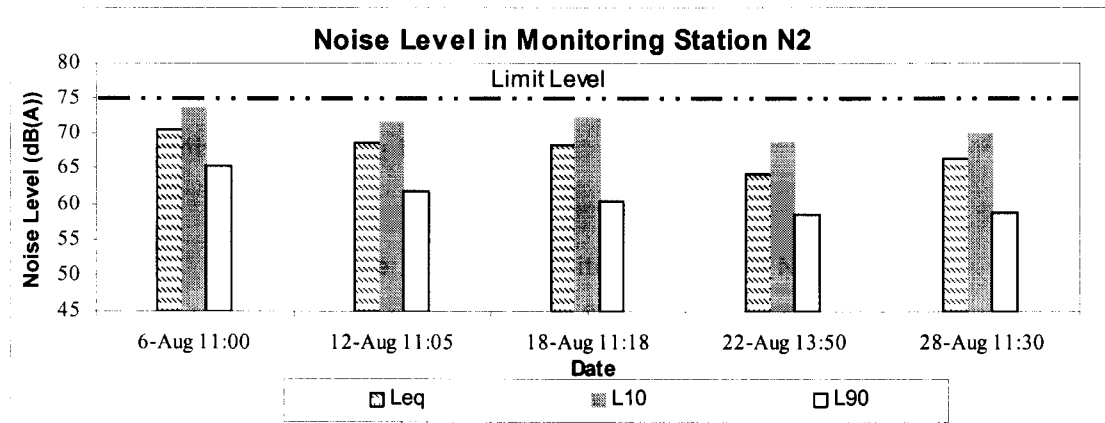
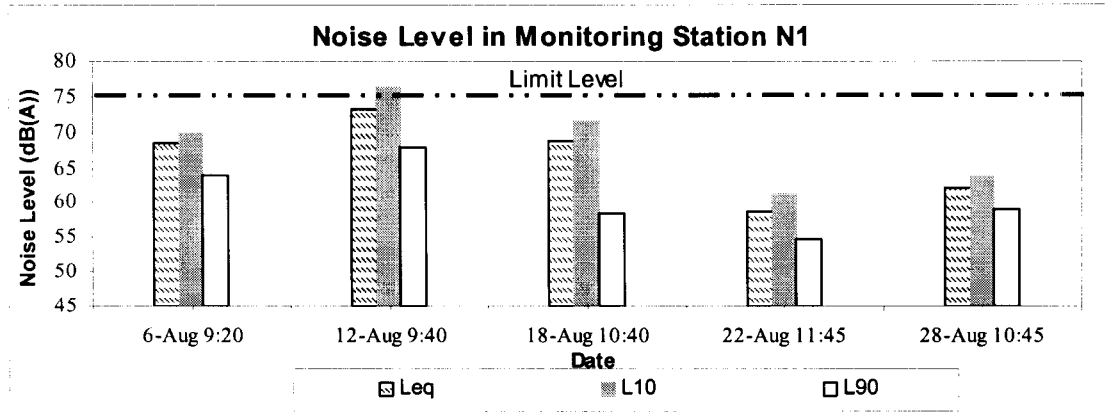
Min 57.8 61.1 53.6
 Max 59.7 62.3 56.4

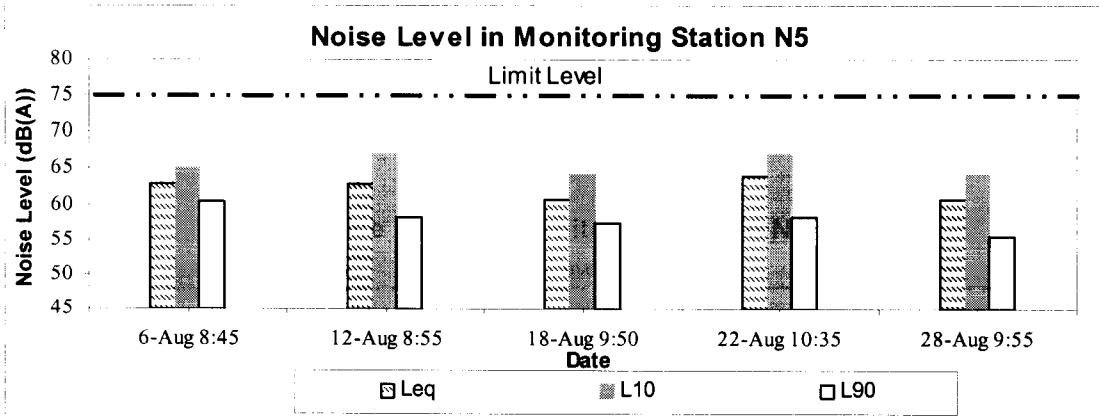
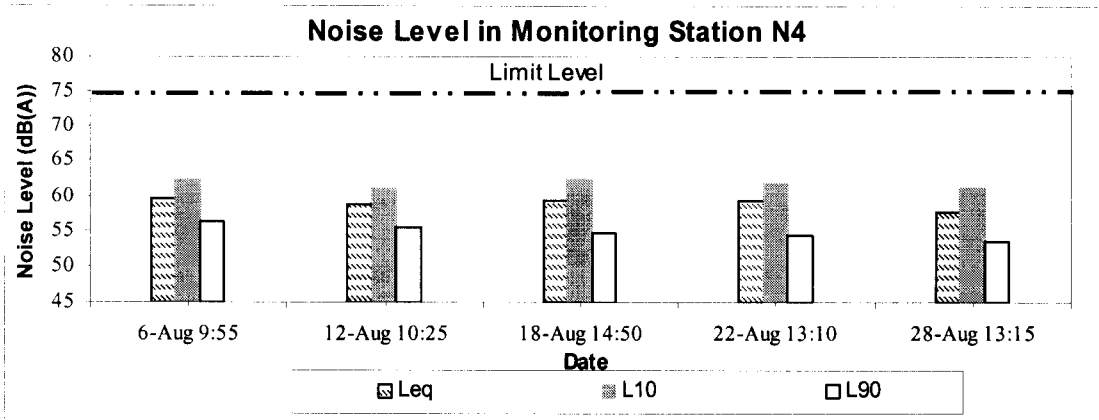
Monitoring Station N5 (Village House near Royal Ascot)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-Aug-03	0845 – 0915	62.9	65.2	60.4
12-Aug-03	0855 – 0925	62.9	67.0	58.1
18-Aug-03	0950 – 1020	60.6	64.2	57.3
22-Aug-03	1035 – 1105	64.1	67.1	58.3
28-Aug-03	0955 – 1025	60.6	64.4	55.6

Min 60.6 64.2 55.6
 Max 64.1 67.1 60.4

2. Plots of Noise Monitoring Results





APPENDIX F:

**Weather Conditions During
Monitoring Periods**

**Weather Condition during Monitoring Period
(From 1 to 31 August 2003)**

Date	Weather	Mean Air Temperature (°C)	Wind Speed (m/s)	Mean Relative Humidity (%)
5-Aug-03	Cloudy	28.0	1.0	81
6-Aug-03	Cloudy	27.9	1.0-1.1	82
11-Aug-03	Cloudy	29.8	1.2	82
12-Aug-03	Cloudy	28.0	0.9-1.2	88
15-Aug-03	Fine	29.7	0.5	81
18-Aug-03	Sunny & hot	29.2	0.5-0.7	77
21-Aug-03	Cloudy	26.7	0.5	90
22-Aug-03	Rainy	26.9	0.1-0.7	91
27-Aug-03	Sunny	28.7	0.5	80
28-Aug-03	Sunny	28.7	0.5-0.7	77
31-Aug-03	Sunny	29.6	0.5	75

APPENDIX G:

**Event and Action Plan for Air
Quality and Noise**

Event / Action Plan for Air Quality

EVENT	ACTION		
	ET	Engineer	CONTRACTOR
ACTION LEVEL			
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Notify Contractor; and 2. Check monitoring data and Contractor's working methods. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice, if any; and 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Discuss with Engineer for remedial actions required; 6. If exceedance continues, arrange meeting with the engineer; and 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for mitigation measures to the Engineer within 3 working days of notification; 2. Implement the agreed proposals; and 3. Amend proposal if appropriate.
LIMIT LEVEL			
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of results. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial action properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Investigate the causes of exceedance; 6. Arrange meeting with EPD and the Engineer to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of the results; and 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 4. Discuss among ET and Contractor on potential remedial actions; 5. Review Contractor's remedial action whenever necessary to assure their effectiveness; and 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated.

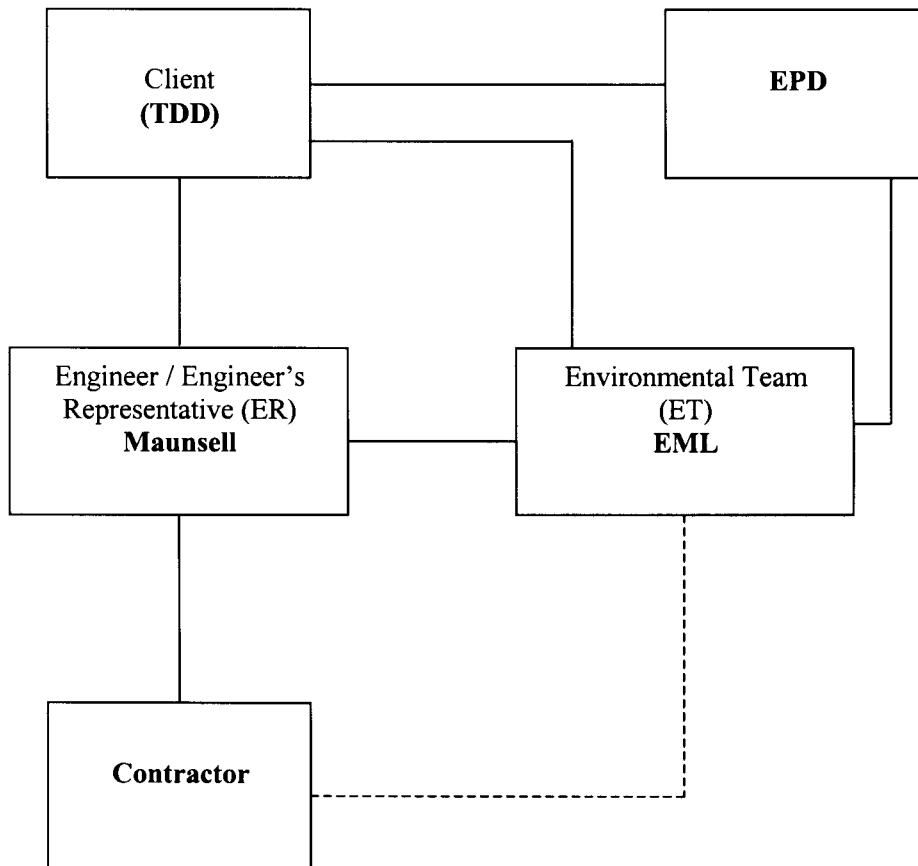
Event / Action Plan for Construction Noise

EVENT	ACTION	
	ET	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify the Engineer and Contractor; 2. Analyze investigation; 3. Require Contractor to propose measures for the analyzed noise problem; and 4. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to Environmental Team and the Engineer; and 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify the Engineer and Contractor; 2. Notify EPD; and 3. Require Contractor to implement mitigation measures; and increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Implement mitigation measures; and 2. Prove to Environmental Team and the Engineer effectiveness of measures applied.

APPENDIX H:

**Project Organisation and
Contacts of Key Personnel**

Figure H.1: Project Management Structure



Contacts of Key Personnel:

Organisation	Nature of Duty	Contact Personnel	Contact Number	
			Telephone	Fax
Territory Development Department (TDD)	Client	Mr. Stephen Wong	2301-1376	2721-8630
Maunsell Consultants Asia Ltd. (MCAL)	Engineer	Mr. Alan Kwong	2602-3433	2691-2649
Environmental Management Ltd. (EML)	Environmental Team	Mr. Lawrence Tso	2890-1090	2890-6901

APPENDIX I:

**Summary Records of
Complaints Received**

Complaint No.	Received date & Time	Description (inc. location/ nature of complaint)	Follow-up Action Taken	Recommended Measures	Status/ Remarks
C02-N1	Morning, 29/7/2002	Around 9:30am on 29/7/02, police came on site to investigate a complaint of noise pollution emitted during rock breaking which carried out by the Contractor near the Site Office (near the box culvert and north Lok Shun Path Roundabout). The Contractor immediately halted the activity in response to police's advice	<ul style="list-style-type: none"> Ad hoc site inspection was carried out on 31/7/02, jointly with the Engineer and Contractor The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. A letter, addressing to the complainant, will be sent to the police. 	<p>Mitigation actions:</p> <ul style="list-style-type: none"> Excavator-mounted breaker shall not be carried out within 125m from any nearby noise sensitive receivers and; Temporary purposed built barrier should be installed whenever there are high noise level construction activities. 	The complaint was considered as ad hoc rather than continuous. It is therefore considered not necessary to increase the noise monitoring frequency File Closed.
C02-N2	Night-time, 7 August, 2002	<ul style="list-style-type: none"> Nearby residents complained to police that a generator in Road D15 Site was operating in night-time near Lok Lo Ha Village. Police came to the site to investigate the complaint and inform watchmen to turn off the operating generator at around 8:30pm. The complaint was valid as it concerned with construction noise during the restricted hours. 	<ul style="list-style-type: none"> Ad hoc site inspection was carried out on 8 August 02, jointly with the Engineer and Contractor and ET. The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. A letter in both English and Chinese, addressing to the complainant, has been sent to the police. 	<p>Mitigation actions:</p> <ul style="list-style-type: none"> Under the Noise Control Ordinance, the carrying out of general construction work using powered mechanical equipment (including generators) during the restricted hours (between 7 p.m. and 7 a.m. or at any time on a general holiday (including Sunday) is prohibited unless a valid Construction Noise Permit is in force; A watchmen or site staff should be employed to check daily that all generators and plats are switched off after the permissible working hours. 	File Closed.

APPENDIX J:

**Updated Construction
Program**

MASTER PROGRAMME (S177/01/MP/11)

Sha Tin New Town Stage II Contract No. S177/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
0	Road D15 Construction Programme	1110 days	12/12/01				
1	1.0 Original Contract Period	965 days	12/12/01				
4	1.2 Works in Section II (822 days)	822 days	12/12/01				
5	1.3 Landscape Work in Section III (1187 Days)	1187 days	12/12/01				
6	2.0 Extension of Times	829 days	22/11/02				29/07/2003
7	2.1 Section I Extension of Time	249.5 days	22/11/02				
8	2.1 Section I A Extension of Time	0 days	31/03/03				
9	2.1 Section II Extension of Time	180 days	13/03/04				
10	2.1 Section III Extension of Time	180 days	13/03/05				
11	3 Preliminary & Site Establishment	729.5 days	12/12/01				
12	3.1 Waste Mgt & Envir Control Manual for EPD approval	600 days	12/12/01				
13	3.2 Submission of mitigation proposal	600 days	12/12/01				
14	3.3 Method Statement/ICE/Material Submission & Approv	600 days	12/12/01				
17	3.6 Utilities undertakers Co-ordination	650 days	12/12/01				
19	3.9 Condition Survey / Defect Survey	60 days	12/12/01				
20	3.10 Erection of Fencing & Hoarding	414 days	12/12/01				
23	3.10.3 Reprovision of Exig KGRC Fence	40 days	17/03/03				
34	5 Entrustment Works (Section I & 1A)	453 days	15/01/02				25/07/2003
35	5.1 Section 1	453 days	15/01/02				25/07/2003
36	5.1.1 General Clearance & Trial Pits Excavation	27 days	15/01/02				
38	5.1.3 Drainage Works (pipelines 1.024-1.026)	340 days	05/06/02				25/07/2003
44	6 Bridge A & General	783 days	12/12/01				
49	6.5 Fabrication PC panel permanent formwork	100 days	24/01/03				
57	6.8 Pile Caps Construction A1 to A5	339 days	19/10/02				
62	6.8.5 A5 Pile Cap	217 days	17/03/03				31/07/2003
63	6.8.5.1 A5 Pile Cap (1st Portion)	110 days	17/03/03				
64	6.8.5.2 A5 Pile Cap (2nd Portion)	50 days	09/10/03				
65	6.9 Abutment Wall A1 to A5	344 days	29/11/02				
66	6.9.1 A1 Abutment Wall	127 days	14/04/03				17/09/2003
68	6.9.1.2 A1 (2nd Portion After Bridge C Beams Con	30 days	13/08/03				17/09/2003
69	6.9.2 A2 Pier & Cross Head	244 days	29/01/03				
71	6.9.2.2 A2 Crosshead	24 days	27/10/03				
74	6.9.5 A5 Abutment Wall	147 days	01/08/03				
75	6.9.5.1 A5 Abutment wall (Portion 1 to allow site c	60 days	01/08/03				
76	6.9.5.2 A5 Abutment wall (Portion 2)	40 days	06/12/03				
77	6.10 Install bridge bearings A1 to A5	310 days	23/01/03				
78	6.10.1 A1 - A2 Bridge Bearings	6 days	28/11/03				
79	6.10.2 A2 - A3 Bridge Bearings	6 days	27/11/03				
81	6.10.4 A4 - A5 Bridge Bearings	6 days	02/02/04				
82	6.11 Install Precast Beams A1 to A5	346 days	14/02/03				
83	6.11.1 A1 to A2 PC Beams	6 days	16/12/03				
84	6.11.2 A2 to A3 PC Beams	6 days	08/12/03				
86	6.11.4 A4 to A5 PC Beams	6 days	05/04/04				
87	6.12 Bridge Deck Construction A1 to A5	393 days	24/02/03				
88	6.12.1 A1 to A2 Bridge Deck	50 days	24/12/03				
89	6.12.2 A2 to A3 Bridge Deck	50 days	16/12/03				
91	6.12.4 A4 to A5 Bridge Deck	50 days	13/04/04				
92	6.13 Bridge Deck Drainage	90 days	12/04/04				
93	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	12/04/04				
94	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	06/05/04				
95	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	01/06/04				
96	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	08/07/04				
97	6.14 Bridge deck Parapet & Curb	313 days	07/07/03				

Date: 15/7/2003

Project Summary

Critical Task Progress
 Milestone
 Summary

Rolled Up Task
 Rolled Up Critical Task
 Rolled Up Milestone

Progress
 Split
 External Tasks

Page 1

MASTER PROGRAMME (S177/01/MP/11)
 Sha Tin New Town Stage II Contract No. S177/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
98	6.14.1 A1 to A2 Parapet & Curb	24 days	12/04/04				
99	6.14.2 A2 to A3 Parapet & Curb	24 days	14/05/04				
100	6.14.3 A3 to A4 Parapet & Curb	24 days	07/07/03				07/08/003
101	6.14.4 A4 to A5 Parapet & Curb	24 days	22/06/04				
102	7 Bridge B	540 days	11/09/02				
104	7.2 Pre Bore H-Piles	199 days	13/12/02				
106	7.3.2 B2 H Piles	22 days	23/07/03				16/08/2003
107	7.3 Pile Cap & Abutment Wall B1 & B2	61 days	31/07/03				16/08/2003
108	7.4.1 B1 Piles Cap & Abutment	40 days	31/07/03				
109	7.4.2 B2 Pile Cap & Abutment	40 days	25/08/03				16/09/2003
110	7.4 Install Bridge Bearings	27 days	20/09/03				
111	7.4.1 B1 bridge Bearings	6 days	20/09/03				
112	7.4.2 B2 Bridge Bearings	6 days	16/10/03				7.4 Install Bridge Bearings 7.4.1 B1 bridge Bearings 26/09/03
113	7.5 Install Precast Beams B1 to B2	6 days	10/01/04				
114	7.6 Bridge Deck Construction B1 to B2	50 days	17/01/04				
115	7.7 Bridge deck Drainage B1 to B2	18 days	19/03/04				
116	7.8 Bridge Deck Parapet & Curb B1 to B2	18 days	19/03/04				
117	7.9 Remove Temp Platform(Underneath Bridge Deck)	60 days	13/10/03				7.9 Remove Temp Platform(Uh
118	7.10 Reinstate Extg Valley	60 days	26/04/04				
119	8 Bridge C	626 days	07/09/02				
121	8.2 Pre Bore H-Piles	214 days	18/11/02				
122	8.2.1 C1 H Piles	29 days	07/07/03				08/09/2003
124	8.3 Pile Cap & Abutment Wall C1 & C2	184 days	25/02/03				08/09/2003
125	8.3.1 C1 Pile Cap & Abutment Wall	50 days	09/08/03				8.3.1 C1 Pile Cap & Abutment Wall
127	8.4 Install Bridge Bearings	361.8 days	02/09/02				
128	8.4.1 C1 Bridge Bearings	6 days	11/10/03				
129	8.4.2 C2 Bridge Bearings	6 days	03/05/03				8.4.1 C
131	8.5 Install Precast Beams B1 to B2	131 days	22/05/03				
132	8.5.1 C1 to C2 PC Beams	3 days	23/10/03				
134	8.6 Bridge Deck Construction C1 to C3	178 days	26/05/03				
135	8.6.1 C1 to C2 Bridge Deck	50 days	27/10/03				
136	8.6.2 C2 to C3 Bridge Deck	60 days	26/05/03				
137	8.7 Bridge deck Drainage C1 to C3	36 days	24/12/03				
138	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	18 days	24/12/03				
139	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	18 days	17/01/04				
140	8.8 Bridge Deck Parapet & Curb C1 to C3	132 days	11/06/03				
141	8.8.1 C1 to C2 Parapet & Curb	24 days	17/12/03				
142	8.8.2 C2 to C3 Parapet & Curb	24 days	11/08/03				
143	8.9 Bridge A, B & C Movement Joint Installation	9 days	26/08/04				
144	9 Road works, Pavement & Cycle Track	277 days	06/10/03				
145	9.1 Drainage to on Grade Road	80 days	20/04/04				
146	9.2 Utilities at on Grade Road	80 days	14/05/04				
147	9.3 Carriage way Weaving Course	6 days	19/08/04				
148	9.4 Road Marking & road furniture	3 days	06/09/04				
149	9.5 Foot path	150 days	09/03/04				
150	9.6 Cycle Track	90 days	24/05/04				
151	9.7 Light Poles	150 days	06/10/03				
152	9.8 Road Work Finishings	120 days	06/04/04				
153	10 Retaining Walls	681 days	12/12/01				
154	10.1 RW1	90 days	24/05/03				08/09/2003
155	10.1.1 RW1 Bay 1	40 days	24/05/03				
156	10.1.2 RW1 Bay 2	40 days	09/06/03				
157	10.1.3 RW1 Bay 3	40 days	23/06/03				

Date: 15/7/2003

Critical Task Progress
 Milestone
 Summary
 Task
 Task Progress
 Critical Task
 Rolled Up Task
 Rolled Up Milestone
 External Tasks
 Project Summary
 Split
 External Tasks

Page 2

MASTER PROGRAMME (ST77/01/MP/11)

Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
158	10.1.4 RW1 Bay 4	30 days	08/07/03				
159	10.1.5 RW1 Bay 5	30 days	22/07/03				
160	10.1.6 RW1 Bay 6	30 days	05/08/03				
161	10.2 RW2	81 days	01/08/03				
162	10.2.1 RW2 Bay 1	40 days	19/08/03				
163	10.2.2 RW2 Bay 2	40 days	02/09/03				
164	10.2.3 RW2 Bay 3	40 days	17/09/03				
165	10.2.4 RW2 Bay 4	30 days	02/10/03				
166	10.2.5 RW2 Bay 5	30 days	01/08/03				
167	10.2.6 RW2 Bay 6	30 days	15/08/03				
168	10.2.7 RW2 Bay 7	30 days	20/09/03				
169	10.3 RW3	210 days	16/12/02				
170	10.3.1 RW3 Bay 4	30 days	09/07/03				
174	10.3.5 RW3 Bay 8	40 days	07/07/03				
175	10.3.6 Dwarf Wall	40 days	17/07/03				
180	10.5 RW5	50 days	01/08/03				
181	10.6 RW6	90 days	19/11/03				
182	10.6.1 Sheet pile walls	12 days	19/11/03				
183	10.6.2 Excavation to +16.5	12 days	03/12/03				
184	10.6.3 Bay 1	24 days	17/12/03				
185	10.6.4 Bay 2	24 days	17/01/04				
186	10.6.5 Backfill to +22	12 days	18/02/04				
187	10.6.6 Remove sheet piles	6 days	03/03/04				
188	10.7 RW7	465 days	18/09/02				
191	10.7.3 install bored pile (21nos)	443 days	15/10/02				
195	10.7.4 Bore Pile Sonic Test	12 days	21/07/03				
196	10.7.5 Bore Pile Core Test	30 days	04/08/03				
197	10.7.5 Construct lagging/concrete decorative wall	60 days	08/09/03				
198	10.7.6 Construct extension section above bored	60 days	06/12/03				
199	10.7.7 Construct Capping Beam	40 days	21/02/04				
200	10.8 RW8	297 days	08/10/02				
205	10.8.5 RW8 Bay 5	80 days	04/07/03				
209	10.10 RW12	84 days	21/07/03				
210	10.10.1 Rwl2 Bay 1	24 days	01/09/03				
211	10.10.2 RW12 Bay 2	24 days	30/09/03				
212	10.10.3 RW12 Bay 3	24 days	21/07/03				
213	11.0 Noise Barriers Preliminary	794 days	12/12/01				
215	11.2 Noise Barrier Structures	451 days	17/10/02				
216	11.2.1 Noise Barrier No. 1	60 days	17/02/03				
219	11.2.1.3 Demolish Extg Retaining Wall Footing	18 days	07/07/03				
222	11.2.1.5 Bore Piles Coring Test	30 days	31/07/03				
223	11.2.1.6 Temporary Shoring & Excavation	60 days	14/08/03				
224	11.2.1.7 Construct Pile Caps	40 days	20/11/03				
225	11.2.1.8 RW Panel 1	40 days	20/11/03				
226	11.2.1.9 RW Panel 2	40 days	13/12/03				
227	11.2.1.10 RW Panel 3	40 days	05/02/04				
228	11.2.1.11 RW Panel 4	24 days	01/11/03				
229	11.2.1.12 RW Panel 5	24 days	08/11/03				
230	11.2.1.13 RW Panel 6	24 days	15/11/03				
231	11.2.1.14 RW Panel 7	24 days	10/07/03				
232	11.2.2 Additional Bore Piles	90 days	10/07/03				
233	11.2.2.1 Mobilisation of RCD	9 days	10/07/03				
234	11.2.2.1 ABPI	24 days	21/07/03				

Date: 15/7/2003

Task Progress:

Critical Task Progress:

Milestone:

Summary:

Task:

Task Progress:

Critical Task:

Rolled Up Task:

Rolled Up Critical Task:

Rolled Up Milestone:

Project Summary:

Split:

External Tasks:

MASTER PROGRAMME (ST77/01/MP/11)

Sha Tin New Town Stage II Contract No. ST77/01, Road D15 Linking Lok Shun Path and Tai Po Road

Sep

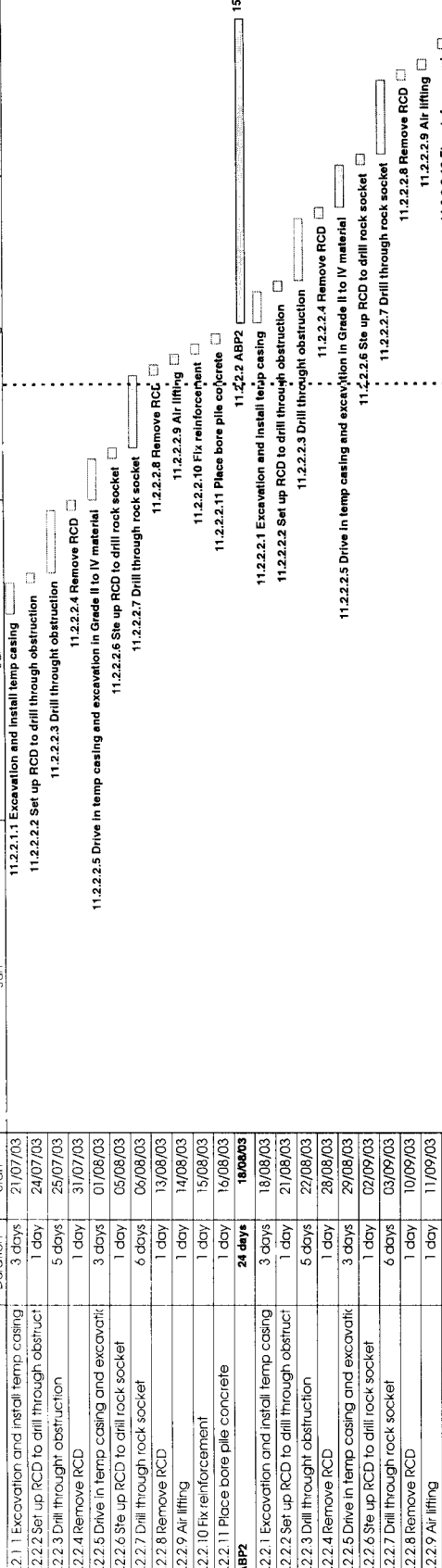
Aug

Jul

Jun

Start

ID	Task Name	Duration	Start
235	11.2.2.1.1 Excavation and install temp casing	3 days	21/07/03
236	11.2.2.2 Set up RCD to drill through obstruction	1 day	24/07/03
237	11.2.2.3 Drill through obstruction	5 days	25/07/03
238	11.2.2.4 Remove RCD	1 day	31/07/03
239	11.2.2.5 Drive in temp casing and excavation in Grade II to IV material	3 days	01/08/03
240	11.2.2.6 Ste up RCD to drill rock socket	1 day	05/08/03
241	11.2.2.7 Drill through rock socket	6 days	06/08/03
242	11.2.2.8 Remove RCD	1 day	13/08/03
243	11.2.2.9 Air lifting	1 day	14/08/03
244	11.2.2.10 Fix reinforcement	1 day	15/08/03
245	11.2.2.11 Place bore pile concrete	1 day	16/08/03
246	11.2.2.2 ABP2	24 days	19/08/03
247	11.2.2.1 Excavation and install temp casing	3 days	18/08/03
248	11.2.2.2 Set up RCD to drill through obstruction	1 day	21/08/03
249	11.2.2.3 Drill through obstruction	5 days	22/08/03
250	11.2.2.4 Remove RCD	1 day	28/08/03
251	11.2.2.5 Drive in temp casing and excavation	3 days	29/08/03
252	11.2.2.6 Ste up RCD to drill rock socket	1 day	02/09/03
253	11.2.2.7 Drill through rock socket	6 days	03/09/03
254	11.2.2.8 Remove RCD	1 day	10/09/03
255	11.2.2.9 Air lifting	1 day	11/09/03
256	11.2.2.10 Fix reinforcement	1 day	13/09/03
257	11.2.2.11 Place bore pile concrete	1 day	15/09/03
258	11.2.2.3 Bore Piles Tests	12 days	17/10/03
259	11.2.2.3.1 Sonic Test	1 day	11/10/03
260	11.2.2.3.2 Core Test	7 days	15/10/03
261	11.2.2.3.3 Grouting Sonic Tubes and core hole	2 days	23/10/03
262	11.2.3 Noise Barrier No. 4B & 4C	120 days	16/08/03
263	11.2.2.1 Sheet pile wall	0 days	16/08/03
264	11.2.2.2 Excavation	12 days	18/08/03
265	11.2.2.3 Construct Footing and Walls	40 days	01/09/03
266	11.2.2.4 Backfill and remove sheet piles	8 days	20/10/03
267	11.2.2.5 Granite Cladding	60 days	29/10/03
268	11.2.4 Noise Barrier No. 5	94 days	05/11/03
269	11.2.3.1 Excavation	12 days	05/11/03
270	11.2.3.2 Construct Footing and Walls	70 days	19/11/03
271	11.2.3.3 Backfill	12 days	16/02/04
272	11.4 Noise Barrier Steel Post & Panels	794 days	12/12/01
274	11.4.1 Design, Submission for approval	250 days	19/06/02
275	11.4.2 Fabrication and Delivery	200 days	17/04/03
276	11.4.3 Noise Barrier Installation	194 days	17/12/03
277	11.4.3.1 Noise Barrier No.1	60 days	20/04/04
278	11.4.3.2 Noise Barrier No. 2	60 days	17/12/03
279	11.4.3.3 Noise Barrier No. 3	60 days	28/01/04
280	11.4.3.4 Noise Barrier No. 4A	60 days	17/12/03
281	11.4.3.5 Noise Barrier No. 4B	60 days	03/03/04
282	11.4.3.6 Noise Barrier No. 4C	30 days	28/04/04
283	11.4.3.7 Noise Barrier No. 5	60 days	04/05/04
284	12 Box Culvert Extension	654 days	27/06/02
288	12.4 Construct 1400 box culvert	166 days	10/04/03
289	12.5 Construct 1500 pipe	388 days	24/04/03
290	12.5.1 Construct 1500 pipe CH10 to CH 30	100 days	24/04/03
291	12.5.2 Construct 1500 pipe CH 30 to CH 62	44 days	13/12/03



Date: 15/7/2003

Task Progress:

Task:

Task Progress:

Critical Task:

Milestone:

Summary:

Rolled Up Task:

Rolled Up Critical Task:

Rolled Up Milestone:

Project Summary:

Split:

External Tasks:

MASTER PROGRAMME (ST77/01/MP/11)
Sha Tin New Town Stage II Contract No. ST77/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
292	12.5.3 Construct 1500 pipe CH 60 to CH 82	70 days	19/05/04				
295	12.8 Construct 1400 Box Culvert Extension	90 days	02/05/03				17/09/2003
296	13.0 Underground Drainage & Utilities	437 days	15/01/03				
297	13.1 Drainage works at Lok He Lo roundabout	437 days	15/01/03				04/09/2003
298	13.1.1 Drainage works at stage 1 of TIM	190 days	15/01/03				
299	13.1.2 Drainage works at stage 3 of TIM	44 days	13/12/03				
300	13.1.3 Drainage works at stage 4 of TIM	40 days	10/02/04				
301	13.1.3 Drainage works at stage 5 of TIM	40 days	29/03/04				
302	13.1.4 Drainage works at stage 6 of TIM	40 days	19/05/04				
303	13.2 CLP Cable Ducts	30 days	13/12/03				
304	13.3 Water pipes and associated Works	323 days	01/03/03				
305	13.3.1 Water Mains for Irrigation system	120 days	06/11/03				
306	13.3.2 Fire Service Pipe & Hydrant	60 days	06/11/03				
307	13.3.3 Water Main Diversion(1400 Box Culvert)	70 days	01/03/03				
308	13.4 Telephone Ducts	40 days	24/11/03				
309	13.5 Existing Utilities Diversion	132 days	29/10/03				
310	13.5.1 RW1, RW2 and 1400 Boxe Culvert	100 days	06/11/03				
311	13.5.2 Abutment A1 to RW1	89 days	19/11/03				
312	13.5.3 RW11 to C2	100 days	29/10/03				
313	13.5.4 A1 Lok King Street	100 days	05/12/03				
314	14 Staircases	480 days	28/01/03				
315	14.1 Stair 1 (NB 4C)	12 days	29/10/03				
316	14.2 Stair 2 (RW8)	40 days	19/06/03				05/08/2003
317	14.3 Stair 3 (RW8)	50 days	15/03/03				23/06/2003
318	14.4 Stair 4 (RW11)	30 days	15/10/03				
319	14.5 Stair 5 (RW6)	30 days	30/09/03				
320	14.6 Stair 6 (Abutment B1)	24 days	27/10/03				
321	14.7 Stair 7 (RW7)	24 days	27/10/03				
322	14.8 Stair 8 (Level +39)	100 days	18/05/03				
323	14.9 Stair 9 (CH300)	12 days	10/01/04				
324	14.10 Stair 10 (RW7.2)	18 days	29/10/03				
325	14.11 Stair 11 (Abutment A5)	12 days	13/10/03				
326	14.12 Stair 12 (House 102)	6 days	02/09/04				
328	15 Standard Refuse Collection Point	60 days	20/04/04				
329	16 Rain Shelter no.1&2	60 days	28/01/04				
330	17 Landscaping	120 days	09/09/04				
331	17.1 Tree Planting	60 days	09/09/04				
332	17.2 Turfing	30 days	29/12/04				
333	18 Project Completion & Handover	587 days	26/06/03				
334	18.1 Section I Completion	0 days	25/07/03				
335	18.2 Section IA Completion	0 days	26/06/03				
336	18.3 Section II Completion	0 days	08/09/04				
337	18.4 Section III Completion	0 days	02/02/05				

Date: 15/7/2003

18 Project Completion & Handover ▼ 25/07/2003

18.1 Section I Completion ▼ 25/07/2003

18.2 Section IA Completion ▼ 26/06/2003

14.2 Stair 2 (RW8) [] 05/08/2003

14.5 Stair 5 (RW5) []

14.8 Stair 8 (Level +39) []

14.11 S

Task Progress

Task Critical Task

Task Milestone

Task Summary

Task Rolled Up Task

Task Rolled Up Critical Task

Task Rolled Up Milestone

Task Project Summary

Task Split

Task External Tasks

Page 5