

**BARBICAN CONSTRUCTION CO., LTD**

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**Contract No. HY/2001/18  
Sai Sha Road Widening between Kam Ying  
Road and Future Trunk Road T7 Junction**

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**MONTHLY ENVIRONMENTAL MONITORING  
& AUDIT REPORT**

**REPORT NO. 08**

Document No. R/2563/011 Issue 1

June 2003

**Babtie Asia**

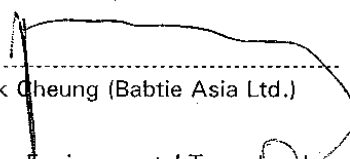
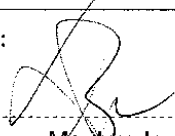


**Babtie Asia**

R/2563/011  
Issue 1  
June 2003

**Contract No. HY/2001/18**  
**Sai Sha Road Widening between Kam Ying Road and**  
**Proposed Road T7 Junction**

**Monthly Environmental Monitoring & Audit Report**  
**Report No. 08**

Approved for Issue by:

Mr Mark Cheung (Babtie Asia Ltd.)
Position: Environmental Team Leader
Date: 5 June 2003
Verified by:

Ms. Lyn Ip (BMT Asia Pacific Limited)
Independent Position: Environmental Checker
Date: 9 June 2003

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CONTRACT NO. HY/2001/18  
SAI SHA ROAD WIDENING BETWEEN KAM YING ROAD  
AND FUTURE TRUNK ROAD T7 JUNCTION

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

REPORT NO. 08

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## EXECUTIVE SUMMARY

This is the eighth EM & A Report for the project of Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction.

This report mainly presents the EM & A works undertaken for the above project from 1 May 2003 to 31 May 2003 in accordance with the EM & A Manual under Appendix H.3 of the Particular Specification.

### **Noise Level**

$L_{eq(30min)}$  noise level measurement was performed at CNM 1, CNM 2 and CNM 3. CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village. CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate. CNM 3 is for (NSR7) Residential Development at Wu Kai Sha DD 206. The limit level for all the noise sensitive receivers is 75 dB(A).

The construction noise monitoring was taken on the 2<sup>nd</sup>, 9<sup>th</sup>, 15<sup>th</sup>, 22<sup>nd</sup> and 29<sup>th</sup> of May 2003. All the measured noise levels at the two monitoring stations (CNM 1 and CNM 2) are below the noise limit level. On 2 May 2003, the adjusted noise level of CNM 3 was found to be 76.5 dB(A) which exceeded the noise limit level. The notification of noise limit exceedance was issued to the Contractor. The investigation is currently undertaken. However, in average, the noise level of CNM 3 was still under the limit level.

### **Complaint log**

No written or verbal complaints were received during the reporting period.

### **Others**

No notifications of summons, no successful prosecutions were received during the reporting period.

### **Future Key Issues**

Adverse influence on both air quality and noise level is anticipated from future construction activities, such as mini pile works for the footbridge construction. The Contractor should carry out good site practice to minimise the potential air pollution and noise pollution.

The site runoff resulting from the pile works for the construction of footbridges should be properly treated before being discharged to the stormwater drainage system.

Since the summer season is coming, the Contractor should exert himself to eliminate the presence of accumulation of stagnant water to avoid the breeding of mosquitoes and the spread of dengue fever.

To improve the hygiene condition of the site, the Contractor should remove the rubbish within the site area.

## 1.0 ENVIRONMENTAL STATUS

### 1.1 Background

Babtie Asia Ltd was employed by the Contractor to act as the Environmental Team for this project. The Independent Environmental Checker is the BMT Asia Pacific Limited.

The purpose of this report is to report the Environmental Monitoring & Audit (EM & A) works in the period between 1 May 2003 and 31 May 2003.

### 1.2 Contact Details of Key Personnel

Titles, names and contact telephone numbers of the key personnel of the captioned project are tabulated below:

Title	Name	Contact Number
Engineer's Representative (Highways Department)	Mr. Greg Leung	2716 1043
EPD	Mr. Simon Hui	2835 1105
Project Director (Contractor)	Mr. David Kong	2137 5522
Project Manager (Contractor)	Mr. Alan Tam	9161 2991
Site Agent (Contractor)	Mr. K I Mok	9813 9599
Environmental Team Leader (Babtie Asia Limited)	Mr. Mark Cheung	2738 3803
Independent Environmental Checker (BMT Asia Pacific Limited)	Ms. Lyn Ip	2241 9812

### 1.3 Construction Programme

The latest construction programme is attached in Appendix A. This construction programme is subject to continuous refinement.

### 1.4 Site Management Structure

The site organization chart is shown as Appendix B.

### 1.5 Works undertaken during the reporting period with illustrations

The works for this project are divided into three sections: Section 1, Section 2 and Section 3.

Section 1 comprises all the works for the completion of the subway system connecting the existing vacant subway barrel across Sai Sha Road adjacent to Kam Ying Road and the local widening of northern Kam Ying Road and all associated landscaping works.

Section 2 comprises all construction works including the new carriageways, two footbridges and all footpath, cycle tracks, subways, village access road, noise barriers, roundabout and associated works comprising drainage works, E&M works, traffic signs and aids, slope works, embankments, retaining walls, subway wing walls, cycle parks, fencing, street lighting and all associated landscaping works, except Section 1 and Section 3.

Section 3 comprises all the works for the new access road to Whitehead and all the works except Section 1 and 2.

The works undertaken during the reporting period were as follows:

- Drainage Works- Manhole construction and construction of drainage pipes at the Sai On Street, and areas adjacent to the Wu Kai Sha Railway Station.
- Construction of Subway (P8F) – Concrete pouring for the structure
- Construction of Subway (S1) – Temporary shoring construction
- Construction of Subway (S2) – Base slab construction
- Construction of Footbridge No.1 (FB1) near Lee Wing House of Lee On Estate and near Wu Kwai Sha New Village – Loading test and Drilling of Minipile at the southern side

The photos showing the road construction, mini pile works for footbridge, construction of manhole, and loading test for footbridge construction are shown in Appendix C.

## 1.6 Project Area, Sensitive Receivers & Monitoring Locations

The drawings showing the project area, noise sensitive receivers (NSRs) and the locations of the monitoring stations are shown in Appendix D.

The construction noise monitoring stations are CNM 1, CNM 2 and CNM 3.

CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village. CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate. CNM 3 is for (NSR7) Residential Development at Wu Kai Sha DD 206.

It is noted that the locations of the monitoring stations are the same as those adopted in the Noise Baseline Monitoring.

## 2.0 IMPLEMENTATION STATUS

According to the EIA report, the following should be implemented for the third construction phase quarter.

Location	Reference Section	Environmental Protection Measures	Agent
<i>Construction Noise Mitigation</i>			
Wu Kwai Sha New Village (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Wu Kwai Sha New Village (2)	EIA 3.5.23	Mitigation Option 2	Contractor
Lok Wo Sha (1)	EIA 3.5.23	Mitigation Option 1	Contractor
Lok Wo Sha (2)	EIA 3.5.23	Mitigation Option 2	Contractor
Kam Lung Court (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Kam Lung Court (2)	EIA 3.5.25	Mitigation Option 2	Contractor
Lee On Estate (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Lee On Estate (2)	EIA 3.5.25	Mitigation Option 2	Contractor
Residential Development STTL446	EIA 3.5.23	Mitigation Option 1	Contractor
Residential Development at Wu Kai Sha DD206	EIA 3.5.23	Mitigation Option 1	Contractor

- Note: The locations of the noise assessment points are shown in the Figure 7 of the EIA Report.

It is noted that the noise pollution control for Wu Kwai Sha New Village (2) and Lok Wo Sha (2) have been changed from mitigation option 1 to mitigation option 2 for this construction phase. This means more stringent control should be implemented to minimise the noise annoyance to the nearby sensitive receivers.



Location	Reference Section	Environmental Protection Measures	Agent
<b><i>Landscape and Visual Mitigation Measures for the Construction Phase</i></b>			
All Scheme Roads	EIA 4.5.1	<ul style="list-style-type: none"> <li>• Conservation of topsoil;</li> <li>• Screening of site construction works by use of hoardings;</li> <li>• Surface treatment of site hoardings to enhance visual interest and harmony with surrounding landscape / townscape;</li> <li>• Locating site offices and other temporary buildings in least visually prominent locations;</li> <li>• Efficient programming of construction works to reduce duration of construction works;</li> <li>• Staging of construction works to minimise areas requiring site hoardings which creates visual intrusion;</li> <li>• Re-routing of pedestrian routes away from the work site where possible;</li> <li>• Retaining existing trees and minimising damage to vegetation where possible. Care shall be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase; and</li> <li>• Careful and efficient transplanting of existing vegetation carried out under the supervision of a professional landscape architect</li> </ul>	Contractor

## 2.1 Advice on the Implementation Status of Environmental Protection & Pollution Control / Mitigation Measures

### 2.1.1 Construction Noise Mitigation Measures

The Contractor should use silencers or mufflers on construction equipment such as pneumatic breaker and air compressor to avoid the noise limit exceedance and the annoyance to the nearby sensitive receivers.

Regular maintenance of the construction plant is strongly encouraged to avoid the black smoke and the excessive noise production. The machines and plant should be shut down or throttled down to a minimum when they are in intermittent use.

The plant known to emit noise strongly in one direction should be orientated to direct noise away from nearby noise sensitive receivers. The mobile plants should be sited as far away from the noise sensitive receivers as possible.

Care should be taken that different mitigation plans (option 1 & option 2) will be applied to different noise sensitive receivers. For mitigation option 2, more stringent environmental control will be required and implemented. The Contractor should pay particular attention to follow and carry out the mitigation measures mentioned in the EIA Report for those sensitive receivers to whom mitigation option 2 should be applied.

It is noted that for different construction phase quarters, the mitigation option will be different. The detailed environmental mitigation implementation schedule is shown in the EIA Report Annex A for different construction phases.

### 2.1.2 Landscape and Visual Mitigation Measures

Care should be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase.

In case of the conflict between the construction machine and the trees during the construction activities, the Contractor may consider adopt an alternative construction approach to protect the trees from being damaged. As the last resort, the tree transplanting method may be considered. However, prior to such action, approval from the Engineer, the Environmental Team Leader and the Independent Environmental Checker should be obtained.

Frequent monitoring of the transplanted tree is required to observe whether they live in good condition in new environment.

### 3.0 MONITORING RESULTS

#### 3.1 Graphical plots of the monitored parameters

The graphical presentations of the monitored parameters during the reporting period are shown in Appendix G.

#### 3.2 Major Activities During the Reporting Period

Major activities during May 2003 include the followings:

- Drainage Works- Manhole construction and construction of drainage pipes at the Sai On Street, and areas adjacent to the Wu Kai Sha Railway Station.
- Construction of Subway (P8F) – Concrete pouring for the structure
- Construction of Subway (S1) – Temporary shoring construction
- Construction of Subway (S2) – Base slab construction
- Construction of Footbridge No. 1 (FB1) near Lee Wing House of Lee On Estate and near Wu Kwai Sha New Village – Loading test and Drilling of Mini pile at the southern side

#### 3.3 Noise Monitoring Methodology

The construction noise monitoring was carried out by using a Sound Level Meter to ensure that exceedance in noise levels could be readily identified and timely action taken to reduce the noise levels within allowable limits.

#### 3.4 Noise Monitoring Equipment

The approved integrating Sound Level Meter, Model No. CESVA SC20-e, in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification as referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), was used for construction noise measurement.

#### 3.5 Calibration Details

A sound level calibrator, Model No. CESVA CB-5, was used to calibrate the Sound Level Meter before and after the measurement on site.

A copy of calibration certificates conducted by DICESVA S.L. for the Sound Level Meter and the Sound Calibrator is attached in Appendix E.

#### 3.6 Noise Parameters

The construction noise levels were measured in terms of equivalent A-weighted sound pressure level ( $L_{eq}$ ) measured in decibels (dB).

$L_{eq(30min)}$  was used as the monitoring parameter for the time period between (0700 to 1900) hours on normal weekdays.

$L_{eq(5min)}$  was used as the monitoring parameter for all other time period, if applicable.

The two statistical sound levels  $L_{A10}$  and  $L_{A90}$ , the level exceeded for 10 and 90 percent of the measurement time respectively, were also recorded as supplementary information for reference.

The construction noise monitoring limit and action level is shown in Appendix I.

### 3.7 Monitoring Locations

The construction noise monitoring was conducted at three noise sensitive receivers, namely, CNM 1 (Wu Kwai Sha New Village), CNM 2 (Kam Lung Court/ Lee On Estate) and CNM 3 (Residential Development at Wu Kai Sha DD 206).

Both the measurement points for CNM 1 and CNM 2 are at facade while the measurement for CNM 3 is under free field measurement. Hence, a correction of + 3 dB(A) will be made to the data for CNM 3.

Locations of construction noise monitoring stations and photos are shown in Appendix D.

### 3.8 Monitoring Date, Time, Frequency and Duration

The monitoring frequency will depend on the scale of the construction activities. The following was adopted as an initial arrangement of measurement on the regular monitoring frequency for each station on a per week basis when noise generating activities are underway:

- (a) one set of measurements between 0700 – 1900 hours on normal weekdays;
- (b) one set of measurements between 1900 – 2300 hours;
- (c) one set of measurements between 2300 – 0700 hours; and
- (d) one set of measurements between 0700 – 1900 hours on holidays

During the reporting period, the construction noise monitoring was conducted on 2<sup>nd</sup>, 9<sup>th</sup>, 15<sup>th</sup>, 22<sup>nd</sup> and 29<sup>th</sup> May and followed the scheme (a). The time and duration of measurement are shown in the Appendix F. The construction noise monitoring schedule for May 2003 and June 2003 is shown in Appendix K.

### 3.9 Noise Monitoring Results

The data for noise monitoring is presented in Appendix F. Graphical representation of construction noise monitoring data is presented in Appendix G.

For CNM 1, the results show that during the reporting period, the noise level is in average 62.3 dB(A) which is below the noise limit level 75 dB(A).

For CNM 2, the results show that during the reporting period, the noise level is in average 66.4 dB(A) which is below the noise limit level 75 dB(A).

For CNM 3, the results show that during the reporting period, the noise level is in average 70.7 dB(A) which is below the noise limit level 75 dB(A).

The major noise sources during the reporting period include the excavation of soil by backhoe, mini pile works for footbridge (FB 1) near Lee On Estate, the Road Works at Sha On Street and the traffic of the heavy vehicles like trucks and bus along the Sai Sha Road. Other noise sources include the residential noise.

### **3.10 Weather Conditions**

The weather conditions were mainly sunny, and cloudy and did not affect the environmental monitoring works during the reporting period. The weather conditions during the period are shown in the Appendix H.

### **3.11 Influencing Factors**

The construction of the KCRC Wu Kai Sha Station and construction of the public transport interchange and the associated development is undertaken near the noise monitoring station CNM 3. These will contribute to the noise production.

The construction works of the ASD site area near Lee On Estate slightly affected the noise monitoring results especially for CNM 2. The traffic noise from Sai Sha Road significantly contributed to the noise pollution.

### **3.12 QA/QC Results and Detection Limits**

The QC result is shown in Appendix E. The lower limit of the sound level meter for  $L_{eq}$  is 0 dB(A). The upper limit for  $L_{eq}$  is 137 dB(A).

#### 4.0 RECORD OF NON-COMPLIANCE OF THE ACTION AND LIMIT LEVELS, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

##### 4.1 Non-compliance of the Action and Limit Levels

###### 4.1.1 Noise

On 17 April 2003, as mentioned in the Monthly EM & A Report No. 7, the measured noise level for CNM 2 was 75.4 dB(A), which marginally exceeded the noise limit level. A notification of the noise limit exceedance was issued to the Contractor. The following is the explanation by the Contractor.

1. Site activities included compaction of soil at Pier 144 and grouting of mini-pile at Footbridge FB1, which involved one vibration roller and one grouting pump.
2. Plants employed by nearby contractors were working near the monitoring point at the time of noise data collection. One mobile crane located in about 50 m from the CNM 2 was working under the KCRC's viaduct and one backhoe located in about 30m from the CNM 2 for the Architectural Services Department's project adjacent Lee Wing House was operating.
3. At the day before the Easter Holiday, Sai Kung attracted much more traffic than normal working day.

These explanations were considered to be acceptable. With the review of the trend of the noise data from 17 April to the end of May, the measured noise level was below the noise limit level. As such, this event was considered to be occasional.

During the reporting period, all the noise levels for three monitoring stations (CNM 1, CNM 2 and CNM 3) are within the noise limit level except the data for CNM 3 on 2 May 2003.

On 2 May 2003, the measured noise level for CNM 3 was 76.5 dB(A), which exceeded the noise limit level. A notification of the noise limit exceedance was issued to the Contractor. In the meanwhile, the ET Leader has contacted the Contractor about the site activities on the day. The investigation is currently undertaken.

##### 4.2 Written Complaints and Verbal Complaints

No written and verbal complaints were received during the reporting period.

The following table shows the summary for all the complaints received since the commencement of the Contract.

TOTAL NO. OF COMPLAINT	NO. OF COMPLAINT RECEIVED WITHIN REPORTING PERIOD	NO. OF COMPLAINT THAT IS STILL UNDER INVESTIGATION	NO. OF CLOSED COMPLAINT
1	0	0	1

The statistics for environmental complaint is shown in Appendix L.

#### **4.3 Notifications of Summons and Successful Prosecutions**

No notifications of summons or successful prosecutions were received by the Contractor regarding the non-compliance of the environmental performance of the construction site during the reporting period.

## 5.0 OTHERS

### 5.1 Future Key Issue

In the coming month, the following activities will be undertaken.

- the construction of subways
- the construction of mini piles for the footbridge
- the construction of drainage works
- the felling of trees near Lee Wing House

Potential environmental impacts due to the above construction works are associated with dust, noise and site runoff.

The locations of the undertaking mini pile works for the footbridge are very near to the Kam Lung Court, Lee On Estate and Wu Kwai Sha New Village. Since these three sensitive receivers should be protected by the noise mitigation option 2 under the EIA Report, the Contractor should minimise the noise pollution from the operation of the machines and plant.

In addition, the Contractor should strengthen the protective measures for pedestrians from being splashed on with muddy water or grout resulting from the mini pile works for footbridge construction near Lee Wing House of Lee On Estate and near the Wu Kwai Sha New Village. Close monitoring on these two locations should be carried out to avoid the complaint from the residents.

Since the heavy rainstorm season is coming, the Contractor should clean the sediments which block the stormwater U-channels within the site area. The Contractor should also remove any rubbish within the site area.

Since the summer season is coming, the Contractor should exert himself to eliminate the presence of accumulation of stagnant water to avoid the breeding of mosquitoes and the spread of dengue fever.

Nonetheless, with the implementation of the following mitigation measures, potential impacts to the surrounding sensitive receivers could be minimised.

#### *Construction Dust*

- Regularly watering of unpaved areas and the dry topsoil.
- Cover the stockpiles with tarpaulin
- Investigate other dust sources
- Maintain onsite machinery and vehicles regularly

#### *Construction Noise*

- Carry out good site practice
- Use quieter plant
- Adopt quiet working methods
- Enclose certain type of power mechanical equipment such as generators and compressors.



- Shut down the machines and plant that may be in intermittent use between work periods or throttled them down to a minimum.
- Provide temporary movable vertical barrier

#### *Construction Site Runoff*

- Direct the site runoff to the desilting facilities
- Desilt the site runoff before discharging it into the stormwater system.

## **5.2 Advice on the solid and liquid waste management status**

### *5.2.1 General Refuse*

General refuse may be generated by site workers. Bins shall be provided for containment prior to disposal of such waste. The Contractor should avoid the accumulation of waste materials or rubbish on site.

If there is any chemical waste or oil generated by the site, they should be properly treated and disposed of as chemical waste. If applicable, the Contractor should register as a chemical waste producer under the registration of the Department of Environmental Protection.

Environmental awareness shall be encouraged in office so as to reduce volume of office waste.

### *5.2.2 Liquid Waste Management*

The accumulation of stagnant water within the construction site should be avoided to eliminate breeding grounds of mosquitoes.

To achieve this, the Contractor should identify potential stagnant areas on the Site and take necessary rectification action, provide personnel to inspect the Site and take appropriate action to ensure no mosquitoes can breed.

Sprinkling the Larvicidal Oil is regarded as the short term measure before the stagnant water is discharged. However, discharging the stagnant water should be the solution for long term.

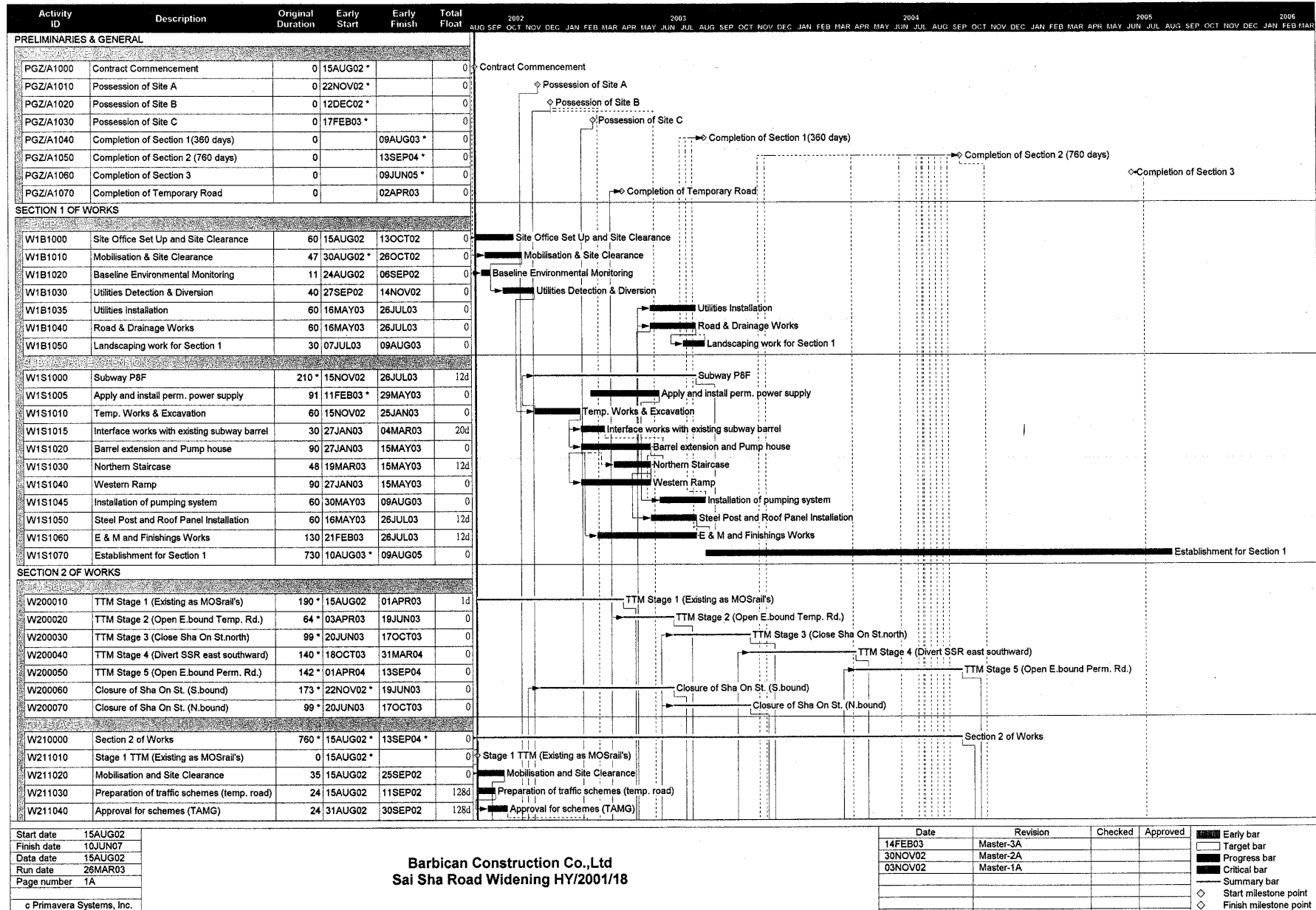
To control the silty water, the Contractor should provide sandbags/ bunds to direct site surface runoff to the desilting facilities such as sedimentation tanks. The desilting facilities should be properly operated and maintained. In the meantime, the sedimentation tank should not become a pool of stagnant water to avoid the breeding of mosquitoes and other insects. Care should also be taken to ensure the capacity of the desilting facilities is sufficient to handle the discharge and to avoid overflow of the silty water.

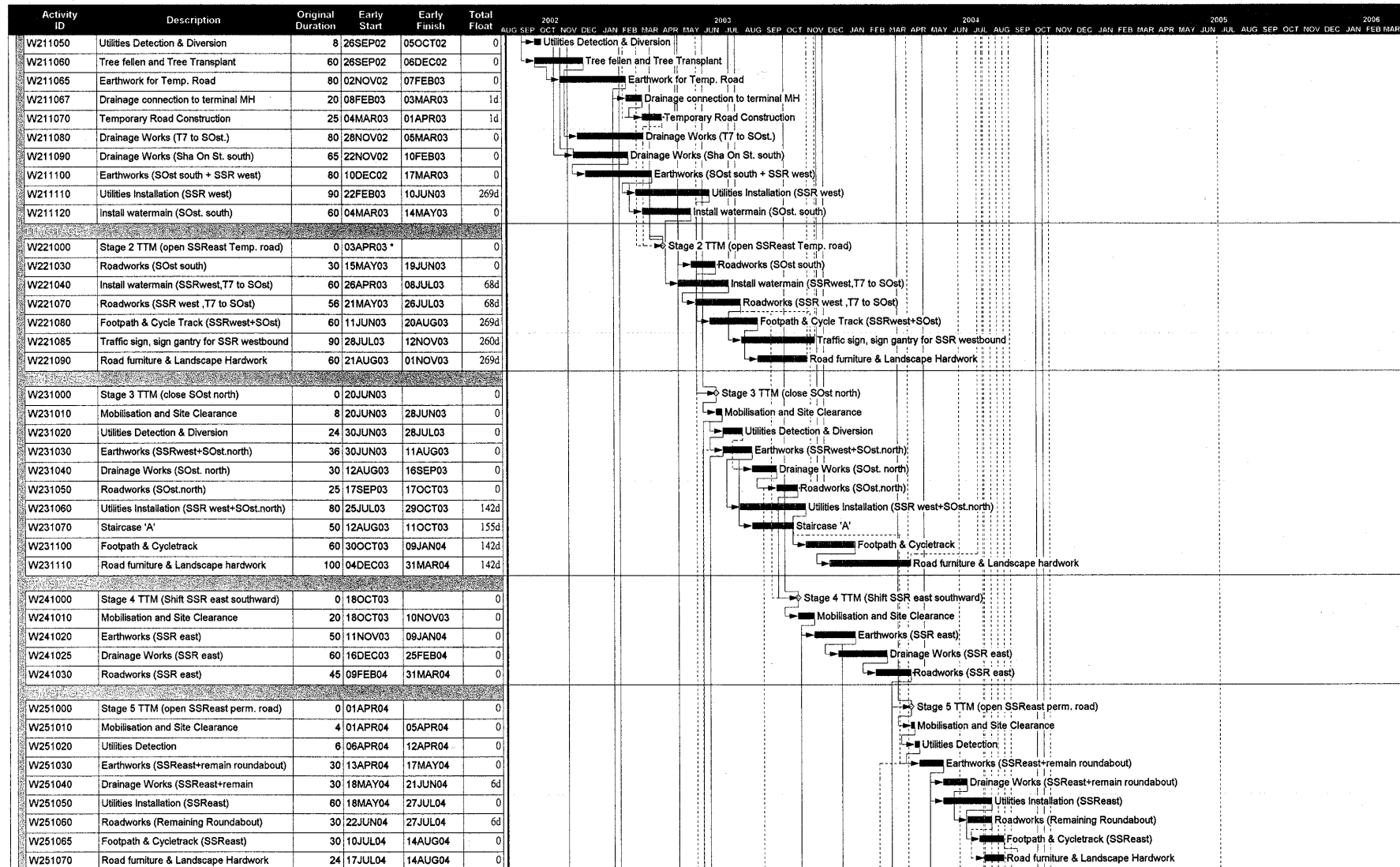
For the wastewater generated from the site area, the Contractor should identify the sources. The produced wastewater should be collected and treated prior to disposal.



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**APPENDIX A**  
CONSTRUCTION PROGRAMME



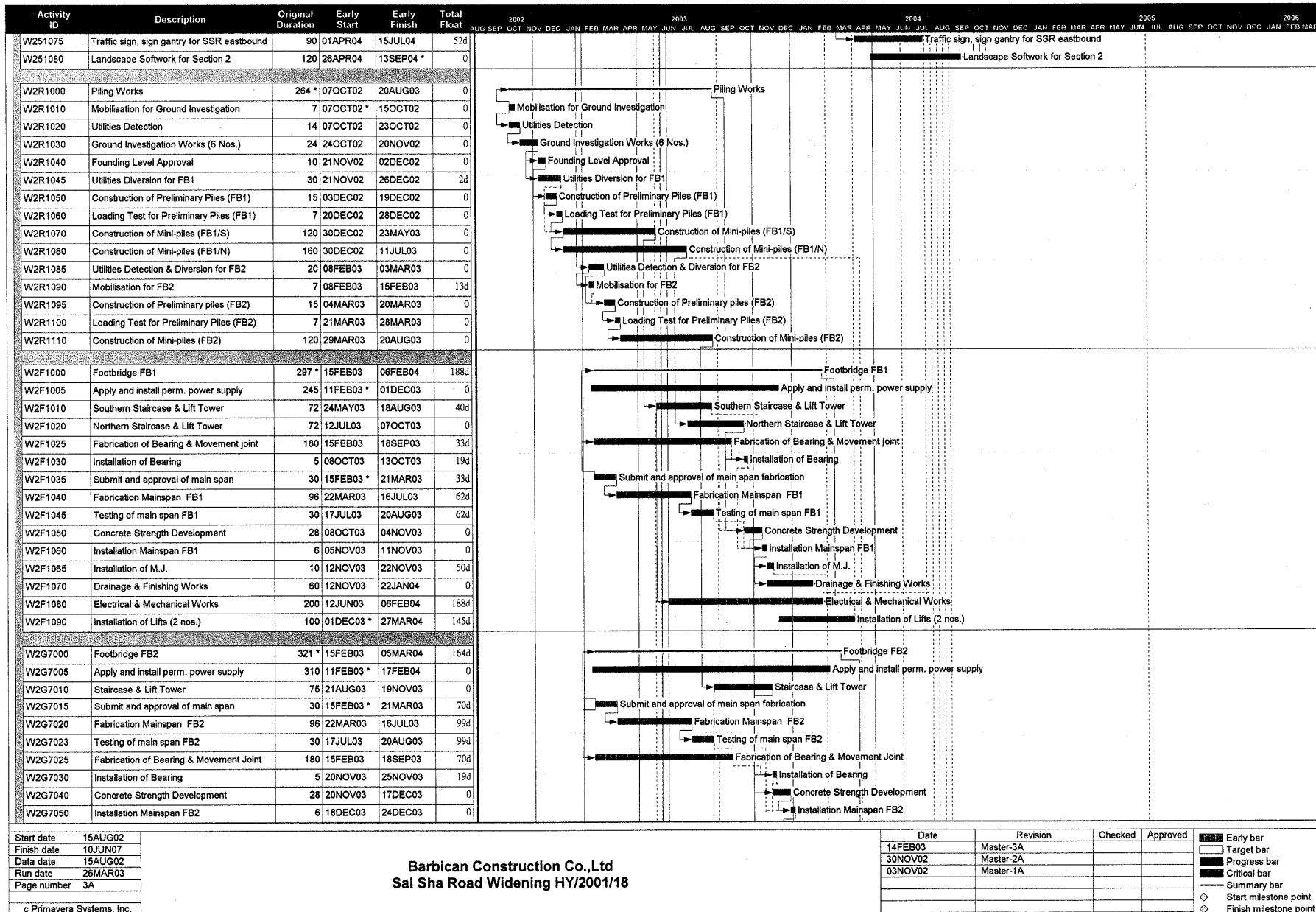


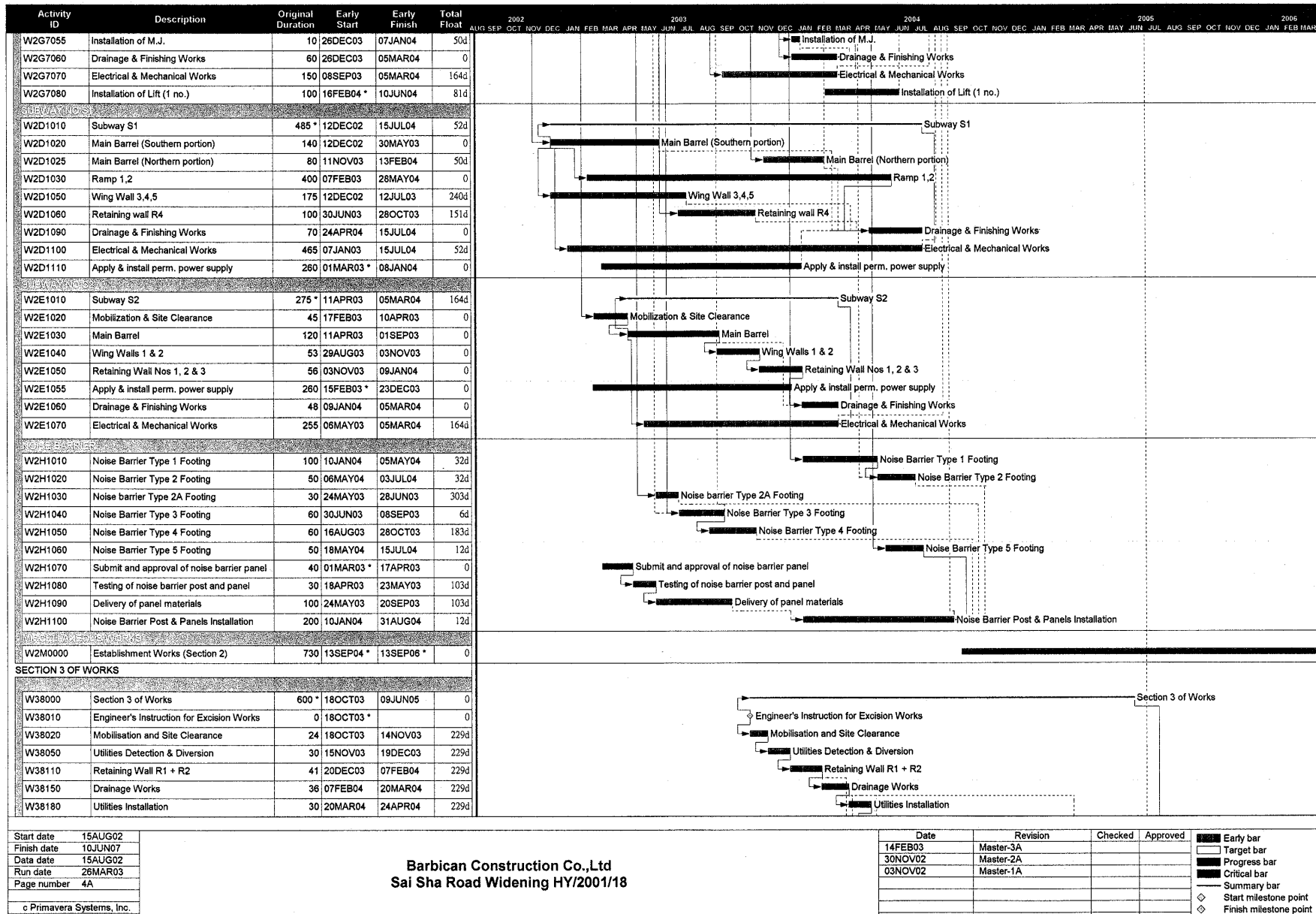
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Date date	15AUG02
Run date	26MAR03
Page number	2A
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Sai Sha Road Widening HY/2001/18

Date	Revision	Checked	Approved
14FEB03	Master-3A		
30NOV02	Master-2A		
03NOV02	Master-1A		

- Early bar
- Target bar
- ▨ Progress bar
- Critical bar
- Summary bar
- ◇ Start milestone point
- ◇ Finish milestone point





Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
W38200	Roadworks to White Head	72	24APR04	17JUL04	229d
W38250	Roadworks	72	24APR04	17JUL04	229d
W38300	Associated Works to tie-in Subway S2	48	22MAY04	17JUL04	229d
W38350	Landscape Soft and Hardworks	64	26MAR05	09JUN05 *	0
W38400	Miscellaneous Works	48	14APR05	09JUN05 *	0
<b>Establishment Works</b>					
W4M0000	Establishment Works (Section 3)	730	09JUN05	10JUN07	0 *



Start date	15AUG02	Date	14FEB03	Revision	Master-3A	Checked		Approved		Early bar
Finish date	10JUN07	Date	30NOV02	Revision	Master-2A	Checked		Approved		Target bar
Data date	15AUG02	Date	03NOV02	Revision	Master-1A	Checked		Approved		Progress bar
Run date	26MAR03									Critical bar
Page number	5A									Summary bar
										Start milestone point
										Finish milestone point

Barbican Construction Co.,Ltd  
Sai Sha Road Widening HY/2001/18



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**APPENDIX B**  
SITE ORGANIZATION CHART

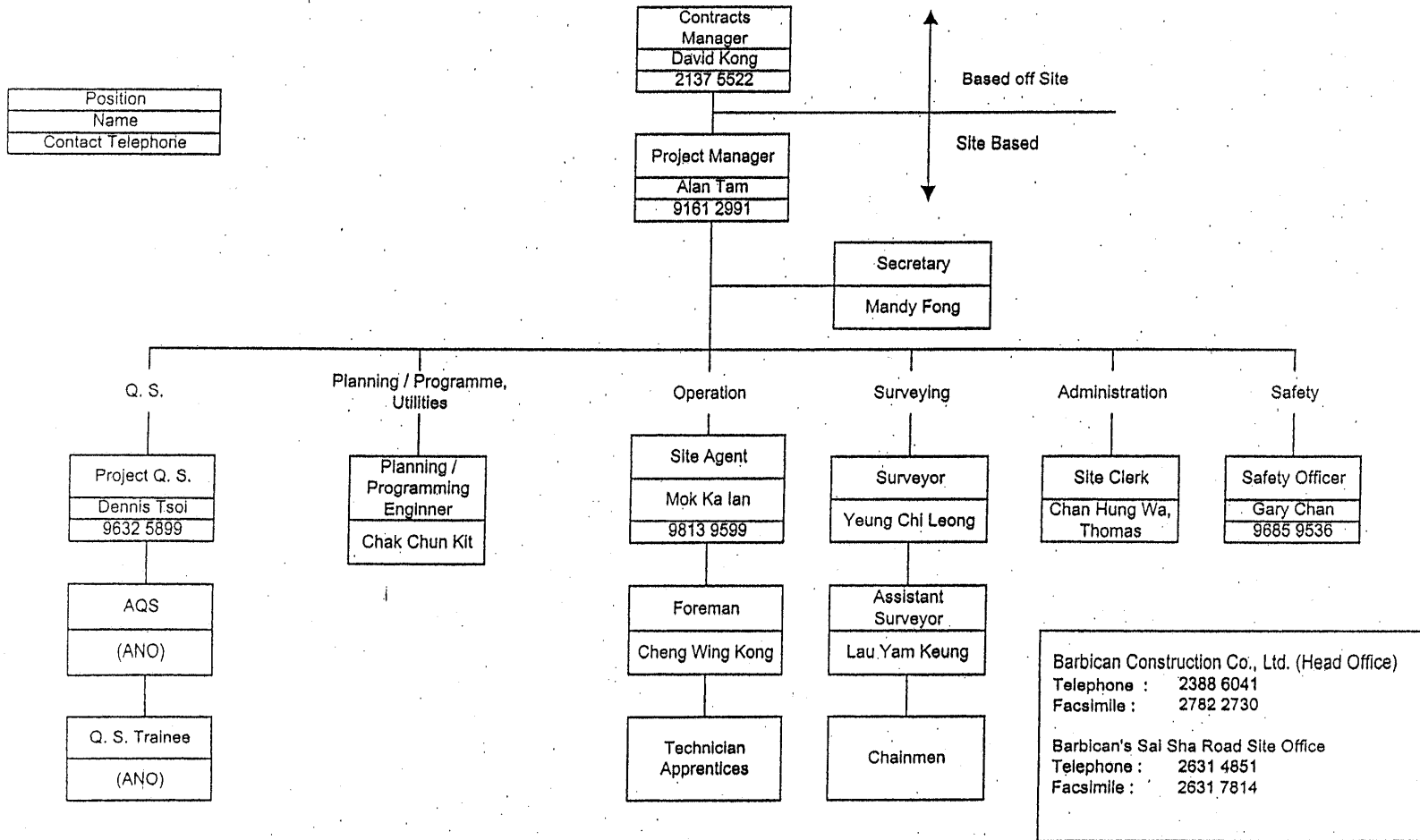


Barbican Construction Co., Ltd.

Contract No. : HY/2001/18  
 Sai Sha Road Widening between  
 Kam Ying Road and Future Trunk Road T7 Junction

Date : 23 September 2002  
 Rev : C

Site Organization Chart





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**APPENDIX C**  
**RECORD PHOTOS FOR CONSTRUCTION ACTIVITIES**  
**IN APRIL 2003**



Date: 6 May 2003

Works: Road Construction

Location: Wu Kwai Sha New Village Access Road



Date: 6 May 2003

Works: Mini pile works for footbridge

Location: Wu Kwai Sha New Village Access Road



Date: 13 May 2003 Works: Construction of Manhole  
Location: Sai Sha Road near Wu Kai Sha Railway Station



Date: 13 May 2003 Works: Loading Test for Footbridge Foundation  
Location: Wu Kwai Sha New Village Access Road



Date: 22 May 2003 Works: Mini pile works for Footbridge  
Location: Wu Kwai Sha New Village Access Road



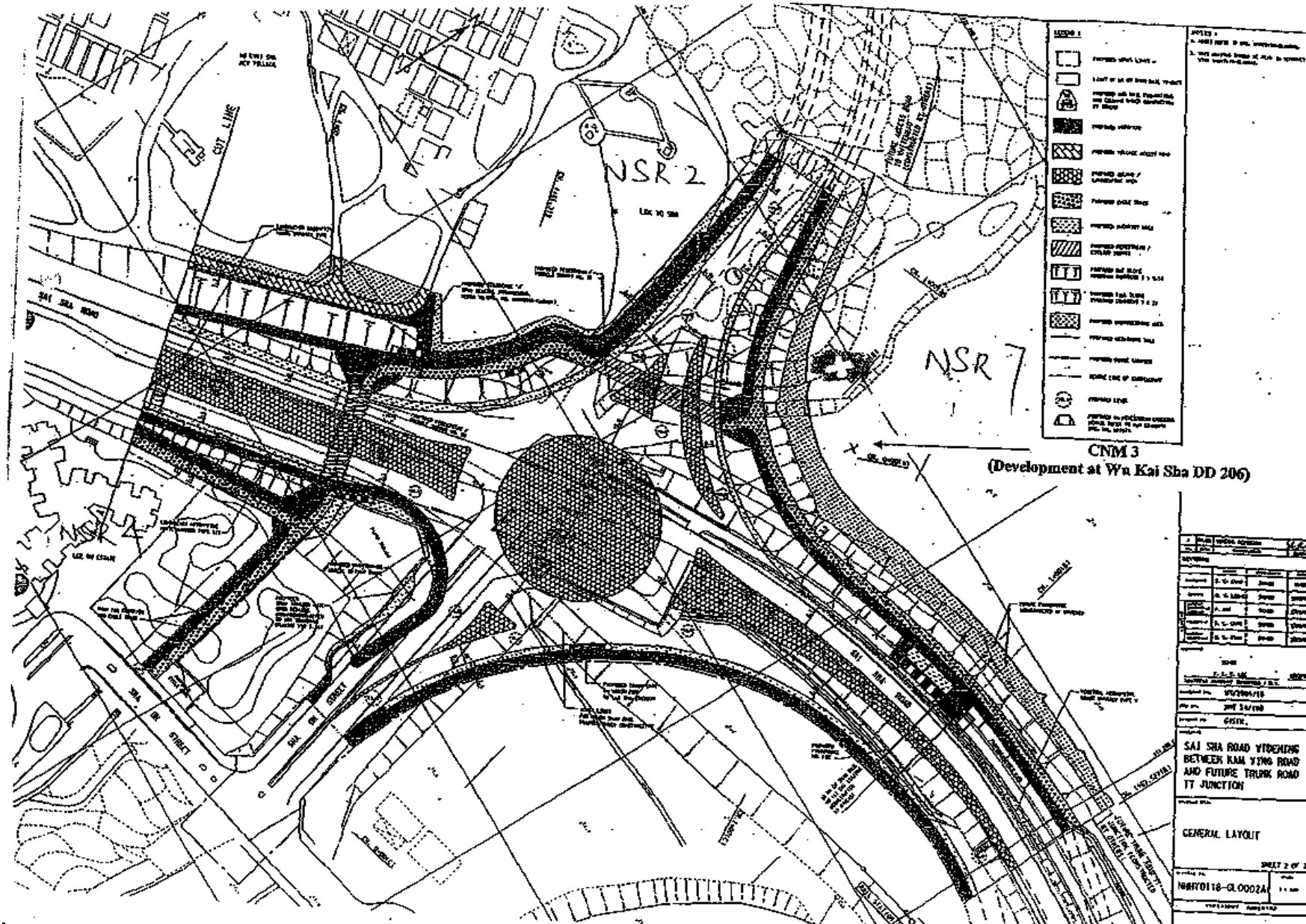
Date: 22 May 2003 Works: Mini pile works for Footbridge  
Location: Sai Sha Road near Lee Wing House



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**APPENDIX D**  
**THE PROJECT AREA, ENVIRONMENTAL SENSITIVE RECEIVERS  
AND THE LOCATIONS OF THE MONITORING STATIONS**









Monitoring Point CNM 1 – Wu Kwai Sha New Village



Monitoring Point CNM 2 – Lee Wing House of Lee On Estate



Monitoring Point CNM 3 – Residential Development at Wu Kai Shs DD 206



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**APPENDIX E**  
**CALIBRATION CERTIFICATES FOR SOUND LEVEL METER**

DICESVA S.L.  
Calibration laboratory

# CERTIFICATE OF CALIBRATION

NUMBER: 0086E/01

DICESVA S.L.  
Calibration laboratory

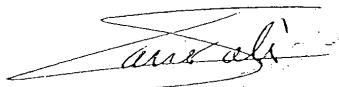
Villar, 20  
08041 BARCELONA  
SPAIN  
Phone number 934 335 240 / Fax 933 479 310

The calibration has been performed following calibration procedure P015 (Revision 0) for acoustic tests and P016 (Revision 0) for electrical tests, based on standards IEC60651:1979/A1:1993 and IEC60804:1985/A1:1989/A2:1993.

INSTRUMENT:	INTEGRATING-AVERAGING SOUND LEVEL METER
MANUFACTURER:	CESVA
MODEL:	SC-20e
SERIAL NUMBER:	T214258
MICROPHONE:	C130, serial number 5609
TYPE:	1
DATE OF CALIBRATION	acoustical tests: 2001-09-03 electrical tests: 2001-09-04
CALIBRATION RESULT:	Within the specifications in the values measured

Laboratory manager

Date of issue: 2001-11-12



Xavier Solà Gimeno

DICESVA S.L.  
Calibration laboratory

# CERTIFICATE OF CALIBRATION

NUMBER: 0087E/01

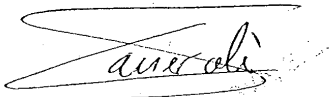
DICESVA S.L.  
Calibration laboratory

Villar, 20  
08041 BARCELONA  
SPAIN  
Phone number 934 335 240 / Fax 933 479 310

The calibration has been performed following calibration procedure P017 (Revision 0), based on standard IEC942:1988.

INSTRUMENT:	SOUND CALIBRATOR
MANUFACTURER:	CESVA
MODEL:	CB-5
SERIAL NUMBER:	031198
TYPE:	1L
DATE OF CALIBRATION	2001-10-17
CALIBRATION RESULT:	Within the specifications in the values measured

Laboratory manager



Xavier Solà Gimeno

Date of issue: 2001-11-12



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**APPENDIX F**  
**DATA OF NOISE MONITORING**

Contract No. HY/2001/18

Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction

Monitoring Location: Wu Kwai Sha New Village (CNM 1)

Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results								
			L <sub>90</sub> (dB(A))	L <sub>10</sub> (dB(A))	L <sub>eq</sub> (dB(A)) (5 mins)						L <sub>eq</sub> (dB(A)) (30 mins)
02/05/03	10:25	30	55.0	62.1	59.3	59.7	58.4	60.4	58.8	59.8	59.4
09/05/03	10:07	30	57.4	63.5	62.1	61.5	60.1	60.8	60.5	61.4	61.1
15/05/03	10:12	30	57.4	72.8	73.1	69.1	68.4	66.8	66.1	62.9	67.7
22/05/03	10:20	30	58.8	63.9	62.6	62.1	61.8	61	61.1	61.9	61.7
29/05/03	10:00	30	57.6	64.1	61.6	60.4	62.3	61.1	62.9	61.5	61.6

Contract No. HY/2001/18

Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction

Monitoring Location: Kam Lung Court (CNM 2)

Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results								
			L <sub>90</sub> (dB(A))	L <sub>10</sub> (dB(A))	L <sub>eq</sub> (dB(A)) (5 mins)						L <sub>eq</sub> (dB(A)) (30 mins)
02/05/03	11:00	30	65.2	76.5	69.5	69.3	68.6	68.9	77.6	75.4	71.6
09/05/03	10:42	30	61.7	66.3	64.4	64.4	63.9	65.0	63.5	65.3	64.4
15/05/03	10:47	30	60.6	65.7	64.1	64.0	63.3	63.6	63.1	64.1	63.7
22/05/03	10:56	30	63.5	68.5	65.6	65.4	65.9	66.0	68.1	67.2	66.4
29/05/03	10:33	30	61.3	66.9	73.5	64.1	64.2	65.1	64.5	63.8	65.9

Contract No. HY/2001/18

Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction

Monitoring Location: Residential Development at Wu Kai Sha DD206 (CNM 3)

Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results									Adjustment *
			L <sub>90</sub> (dB(A))	L <sub>10</sub> (dB(A))	Leq (dB(A)) (5 mins)						Leq (dB(A)) (30 mins)	
02/05/03	11:35	30	66.4	75.0	73.6	73.5	74.3	74.6	72.6	72.5	73.5	76.5
09/05/03	11:17	30	65.5	70.9	69.6	68.6	69.8	68.2	68.1	68.2	68.8	71.8
15/05/03	11:22	30	61.2	68.3	66.4	66.5	66.7	65.9	64.9	63.3	65.6	68.6
22/05/03	11:32	30	57.5	67.6	66.5	66.5	64.3	61.9	62.6	64.0	64.3	67.3
29/05/03	11:09	30	61.6	69.4	65.1	65.4	67.6	65.7	68.3	66.5	66.4	69.4

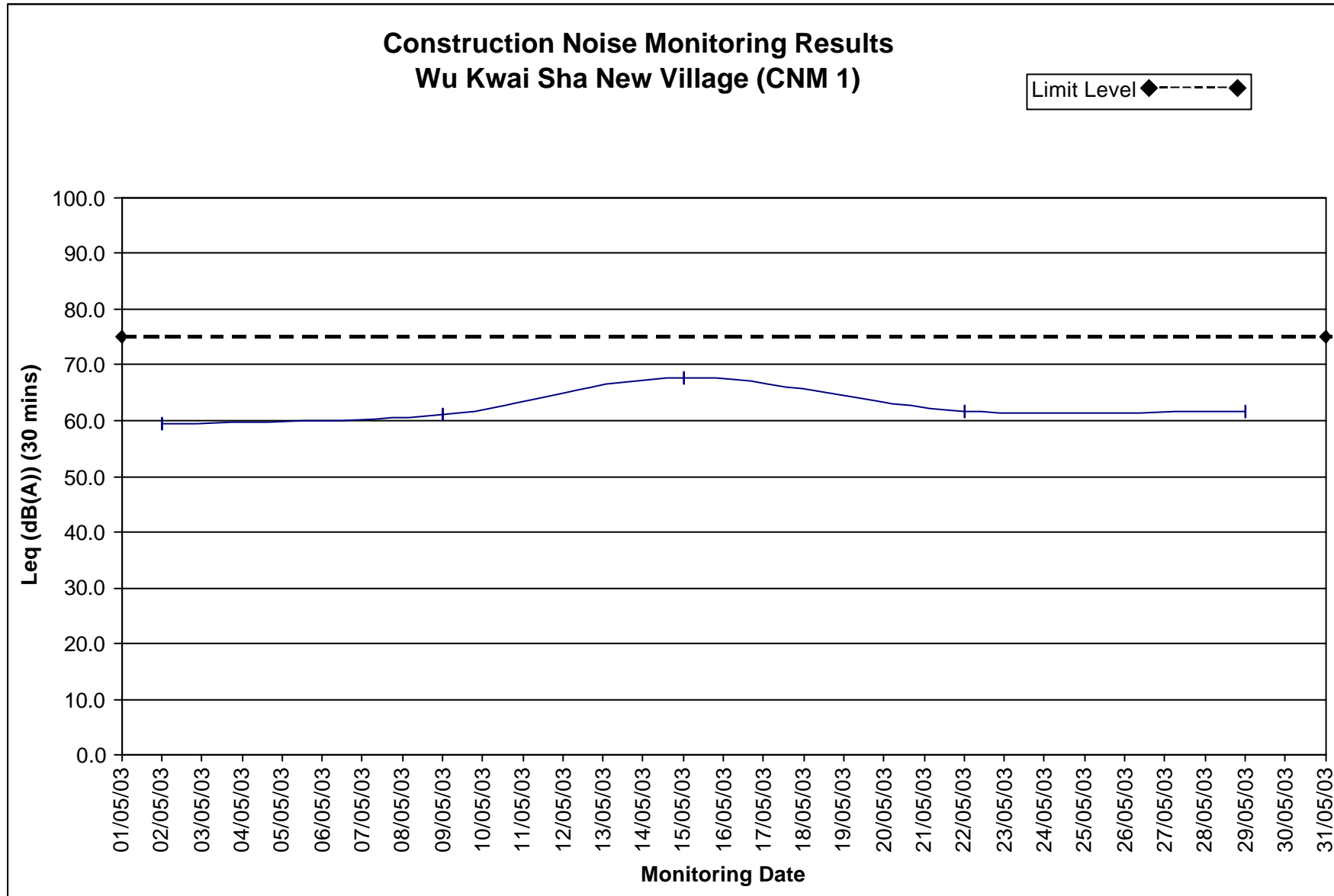
\* Note: A correction of + 3dB (A) is made to the free field measurements

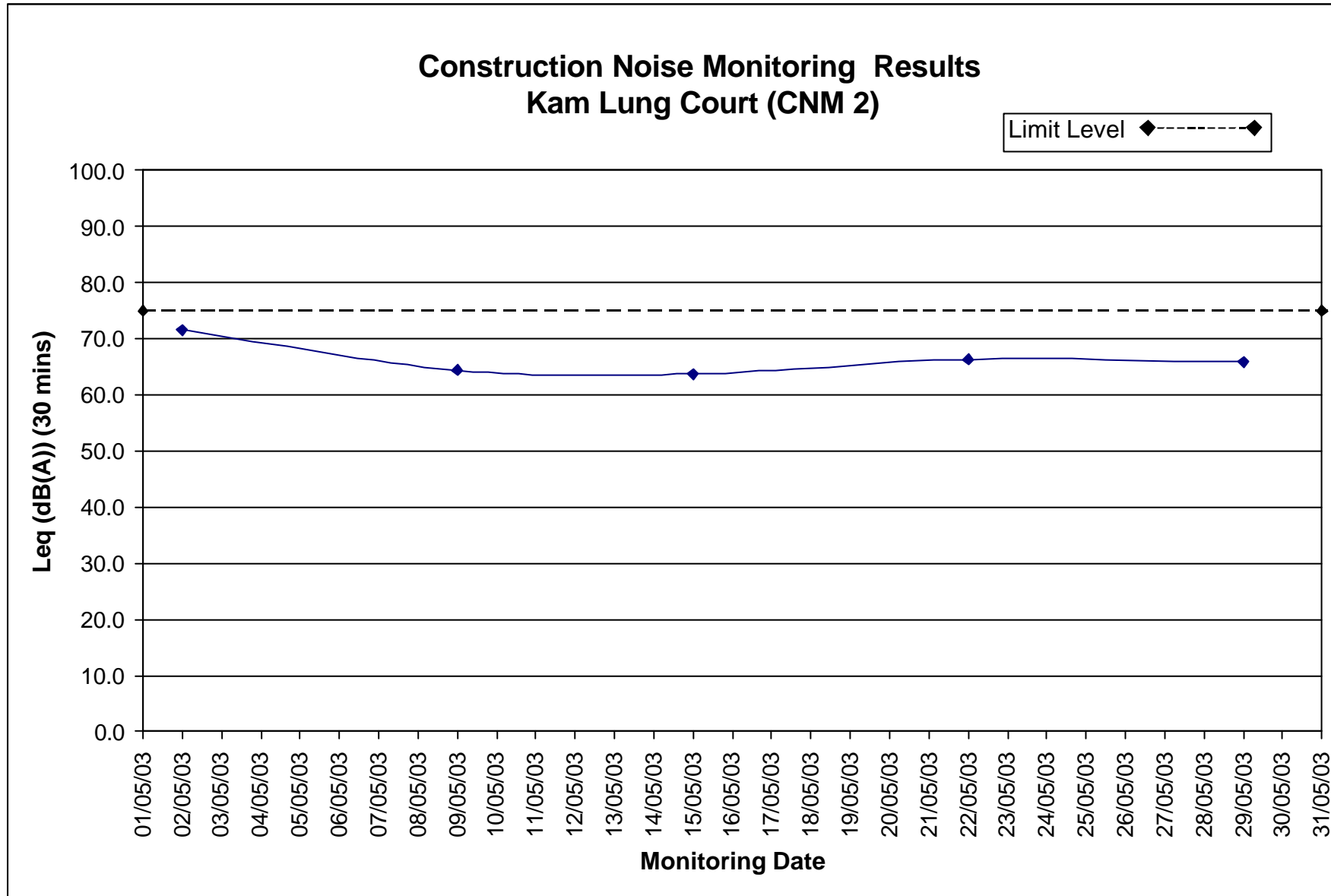


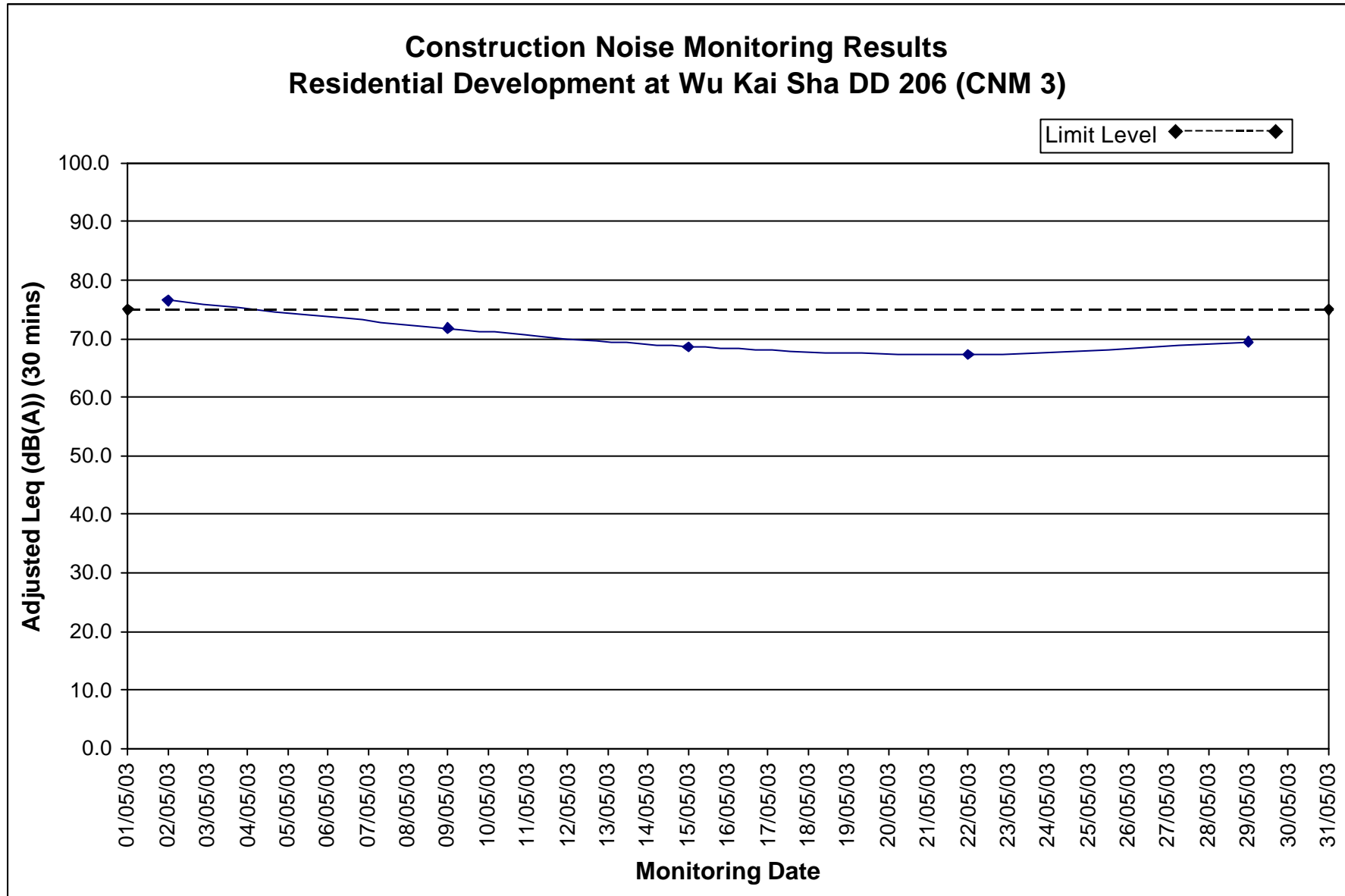
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**APPENDIX G**  
GRAPHICAL REPRESENTATION OF  
CONSTRUCTION NOISE MONITORING DATA











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**APPENDIX H**  
**WEATHER CONDITIONS**  
**DURING THE MONITORING PERIOD**

**Contract No.**

HY/2001/18

**Sai Sha Road Widening between Kam Ying Road****and Future Trunk Road T7 Junction****Major Activity and Weather Condition During Baseline Monitoring****Monitoring Location: Wu Kwai Sha New Village (CNM 1)**

<b>Date</b>	<b>Start Time</b>	<b>Weather Condition</b>	<b>Major Activities</b>	<b>Other Activities</b>
02/05/03	10:25	Sunny	Backhoe	Traffic and Pedestrian
09/05/03	10:07	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	10:12	Sunny	Backhoe	Traffic
22/05/03	10:20	Sunny	Backhoe	Traffic
29/05/03	10:00	Sunny	Backhoe	Traffic

**Contract No.**

HY/2001/18

**Sai Sha Road Widening between Kam Ying Road****and Future Trunk Road T7 Junction****Major Activity and Weather Condition During Baseline Monitoring****Monitoring Location: Kam Lung Court (CNM 2)**

<b>Date</b>	<b>Start Time</b>	<b>Weather Condition</b>	<b>Major Activities</b>	<b>Other Activities</b>
02/05/03	11:00	Sunny	Backhoe	Traffic and Pedestrian
09/05/03	10:42	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	10:47	Sunny	Backhoe	Traffic and Pedestrian
22/05/03	10:56	Sunny	Backhoe	Traffic and Pedestrian
29/05/03	10:33	Sunny	Backhoe	Traffic and Pedestrian

**Contract No. HY/2001/18**

**Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction**

**Major Activity and Weather Condition During Baseline Monitoring**

**Monitoring Location: Residential Development at Wu Kai Sha DD206 (CNM 3)**

<b>Date</b>	<b>Start Time</b>	<b>Weather Condition</b>	<b>Major Activities</b>	<b>Other Activities</b>
02/05/03	11:35	Sunny	Backhoe, Machinery	Traffic and Pedestrian
09/05/03	11:17	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	11:22	Sunny	Nil	Traffic and Pedestrian
22/05/03	11:32	Sunny	Backhoe	Traffic and Pedestrian
29/05/03	11:09	Sunny	Backhoe	Traffic and Pedestrian



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# **APPENDIX I**

## **CONSTRUCTION NOISE MONITORING LIMIT ACTION LEVEL**



According to Section 2.7 of the *EM & A Manual*, the Action and Limit Noise Levels are summarised in the following table:

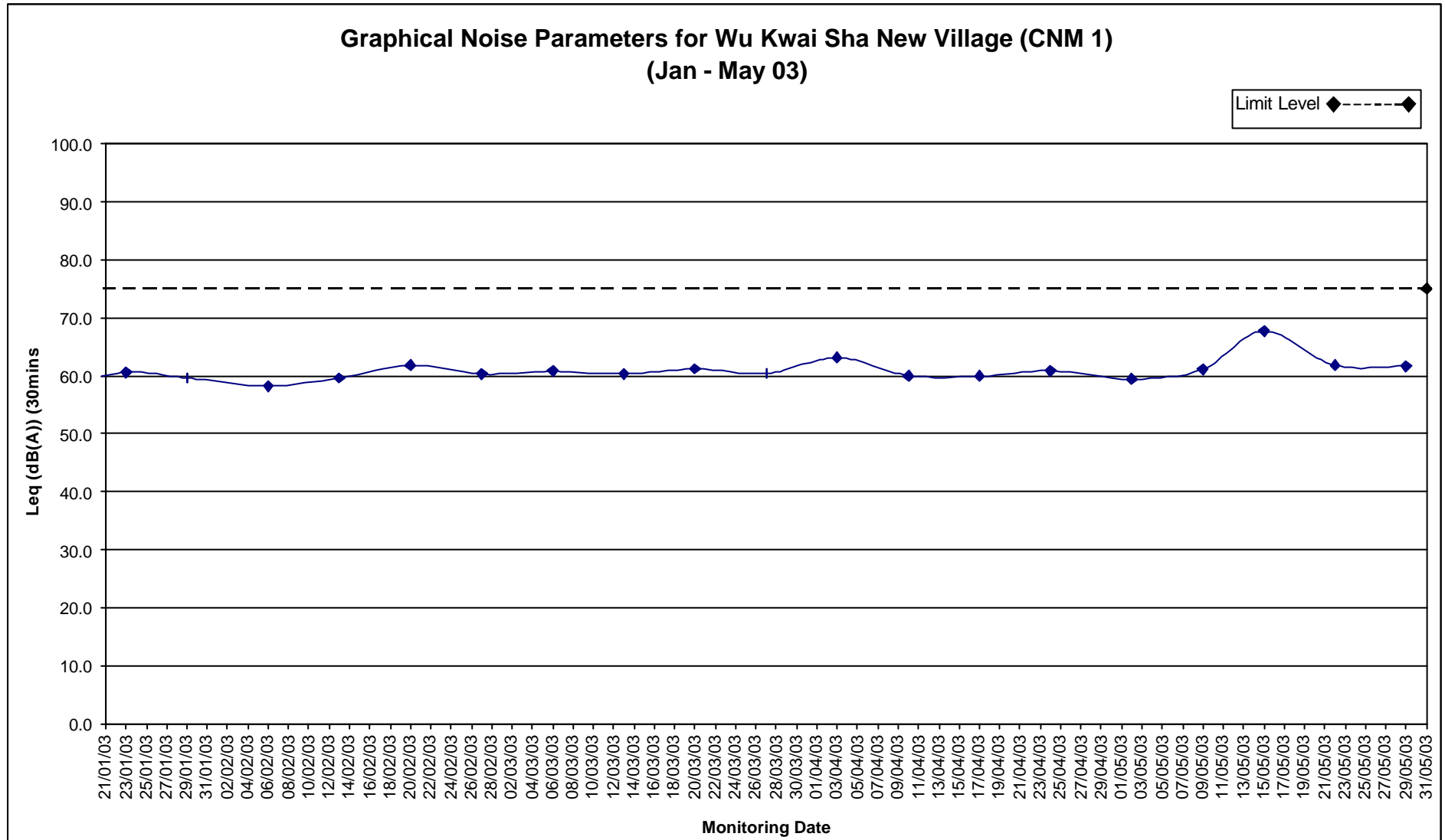
Time Period	Action	Limit Level
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)
0700-2300 hours on holidays; and 1900-2300 hours on all other days		70 dB(A)
2300-0700 hours of next day		55 dB(A)

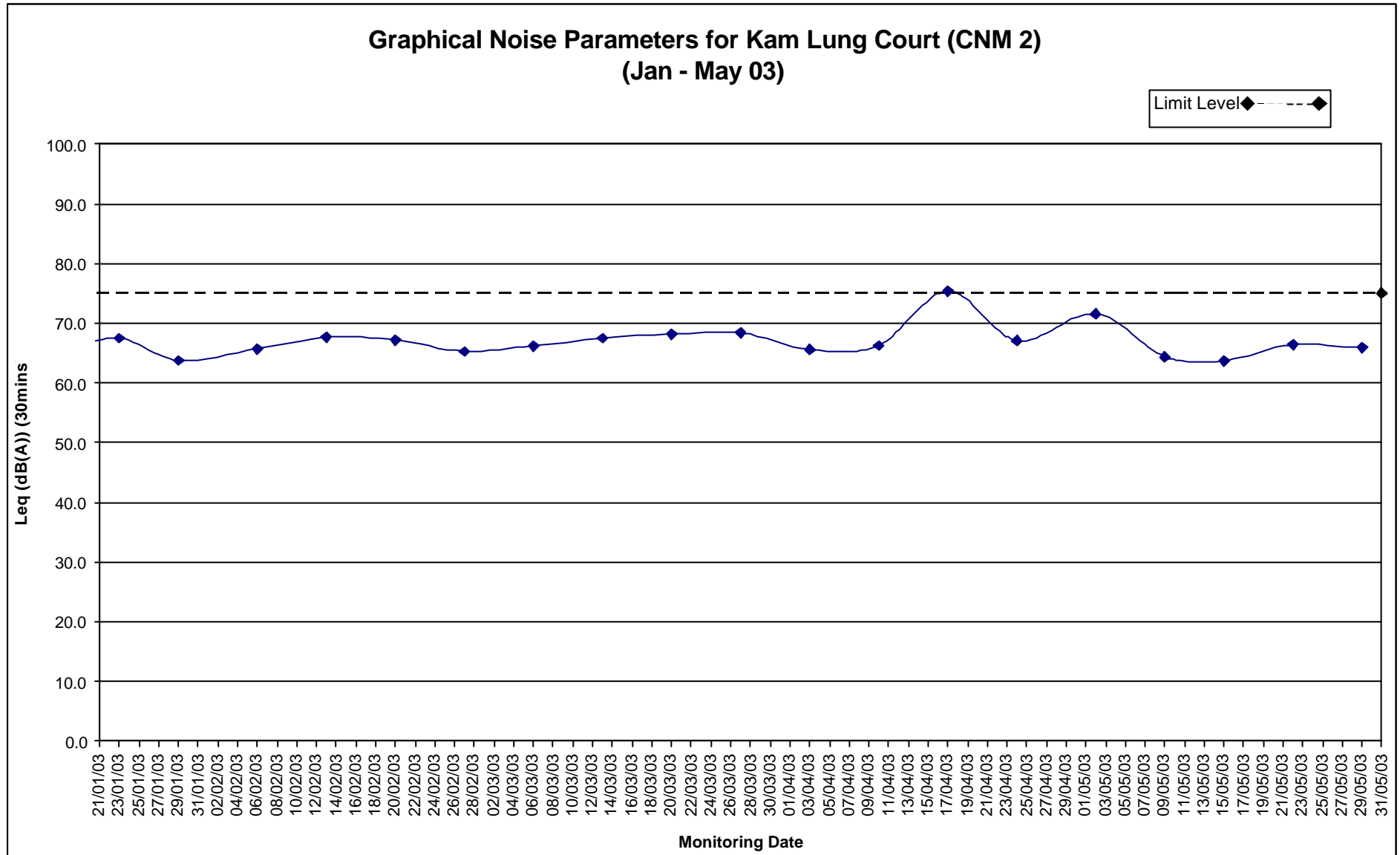
*Note: The noise limit level for all the NSRs within this contract is 75dB(A).*

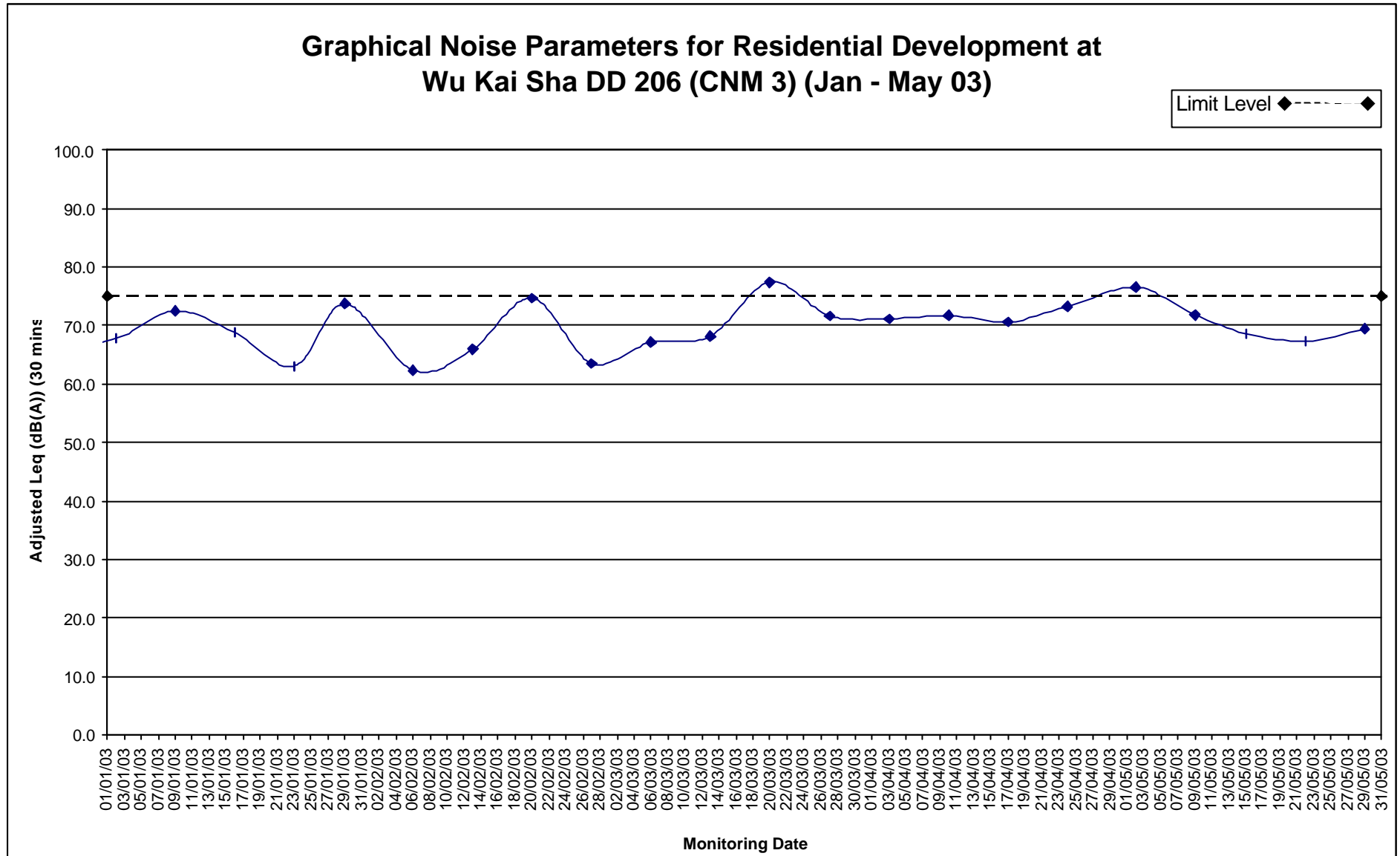


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**APPENDIX J**  
**GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS**









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## **APPENDIX K**

### **CONSTRUCTION NOISE MONITORING SCHEDULES**

**APRIL 2003 AND MAY 2003**

### Construction Noise Monitoring Schedule

May – June 2003

Location Point	Monitoring Parameter	Measurement Start Time				
		02/05/2003 (Friday)	09/05/2003 (Friday)	15/05/2003 (Thursday)	22/05/2003 (Thursday)	29/05/2003 (Friday)
CNM 1	L <sub>eq</sub> (30 min)	10:25	10:07	10:12	10:20	10:00
CNM 2	L <sub>eq</sub> (30 min)	11:00	10:42	10:47	10:56	10:33
CNM 3	L <sub>eq</sub> (30 min)	11:35	11:17	11:22	11:32	11:09

Location Point	Monitoring Parameter	Measurement Start Time				
		05/06/2003 (Thursday)	12/06/2003 (Thursday)	19/06/2003 (Thursday)	26/06/2003 (Thursday)	
CNM 1	L <sub>eq</sub> (30 min)	10:00	10:00	10:00	10:00	
CNM 2	L <sub>eq</sub> (30 min)	10:40	10:40	10:40	10:40	
CNM 3	L <sub>eq</sub> (30 min)	11:20	11:20	11:20	11:20	

\* Note: In case of poor weather condition on the monitoring date, we will inform the Contractor to arrange another construction noise impact monitoring in a day in the same week.



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**APPENDIX L**  
**STATISTICS FOR ENVIRONMENTAL COMPLAINTS**



**Contract No. HY/2001/18  
Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction**

**Statistic for Environmental Complaint  
May 2003**

