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FINAL ASSESSMENT REPORT
Environmental Impact Assesment

Territory Development Department
(Agreement No. CE34/93)

Yuen Long - Tuen Mun Corridor, Engineering Works for Hung Shui Kiu

EHS Consultants Limited
Consultants in Environmental Protection, Health and Safety

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Reference	**:**	**R1383.97**
Client	**:**	**Territory Development Department** **Hong Kong Government**
Date	**:**	**August 1997**

For and on behalf of EHS Consultants Limited:

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1. INTRODUCTION

1.1 Background

According to the North West New Territories Base Development Strategy, Hung Shui Kiu was recommended to be developed into a District Centre with "Medium Density Urban Development" to serve the population of the Corridor. With the existing Light Rail Transport and a proposed public transport terminus in the area, Hung Shui Kiu will provide government, institution and community facilities which include schools, a transport interchange, car parks and open space, for the population in the area. Land is also retained for commercial and residential uses. The Hung Shui Kiu District Centre will be implemented according to three newly gazetted outline zoning plans (OZPs).

Whilst numerous residential developments such as Parkview Garden and Meadowlands have already been developed by private sectors in the area, a high density rural public housing estate has also been scheduled at Area 13, which is expected to be completed in 2002. In order to provide supporting engineering infrastructure works to cope with the increasing demand from both existing and proposed developments at Hung Shui Kiu, it is necessary to implement the works included under Agreement No. CE34/93 : "Yuen Long - Tuen Mun Corridor - Engineering Works for Hung Shui Kiu" (PWP Items 225CL (Ph.2) and 253CL (Ph.1)). This Agreement involves the construction of a network of roads with associated services, and site formation for various government and public uses in the area, with the scope of work shown in Figure 1-1 (the proposed works). The consultancy agreement also includes an Environmental Impact Assessment (EIA) which should address the environmental impact associated with the proposed works to be carried out under CE34/93, and the roadworks to be undertaken by the Highways Department independently under a separate project "Yuen Long - Tuen Mun Corridor - Engineering Works for Commercial/ Residential Areas at Hung Shui Kiu, Stage II, Phase I" (PWP Item 225CL (Ph.1)) as shown in Figure 1-2. The scope of the EIA is as shown in Figure 1-3.

EHS Consultants Limited (the Consultant) has been commissioned by Territory Development Department as sub-consultant to Ho Tin & Associates Consulting Engineers Limited (Ho Tin) to carry out this Environmental Impact Assessment (EIA) to identify and assess the nature and extent of environmental impacts associated with the construction and operation of the two proposed projects and all related activities taking place concurrently. Data on traffic flows on the proposed road scheme were predicted by the Project Traffic Consultant, MVA ASIA Limited.

1.2 Objective of the EIA

Section 3.1 (a) of the Study Brief presents the objectives for this EIA for the proposed projects. These are presented below:-

(i) to describe the proposed project and associated works together with the requirements for carrying out the proposed project;

(ii) to identify and describe the elements of the community and environment likely to be affected by the proposed project, and/or likely to cause adverse impacts upon the proposed project, including both the natural and man-made environment;

(iii) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses;

(iv) to propose the provision of infrastructure or mitigation measures so as to minimise pollution, environmental disturbance and nuisance during construction and operation of the project;

(v) to identify, predict and evaluate the residual (i.e. after practicable mitigation) environmental impacts and cumulative effects expected to arise during the construction and operation phases of the project in relation to the sensitive receivers and potential affected uses;

(vi) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the project which are necessary to mitigate these impacts and reduce them to acceptable levels;

(vii) to design and specify the environmental monitoring and audit requirements necessary to ensure the implement and the effectiveness of the environmental protection and pollution control measures adopted;

(viii) to investigate the extent of side-effects of proposed mitigation measures that may lead to other forms of impacts;

(ix) to identify constraints associated with the mitigation measures recommended in the study; and

(x) to identify any additional studies, including ecological surveys, necessary to fulfill the objectives to the requirements of this Environmental Impact Assessment Study.

1.3 Scope of Works

The scope of the EIA as stipulated in Figure 1-3 covers the assessment of the proposed works to be carried out under CE34/93 (PWP Items 225CL (Ph.2) and 253CL (Ph.1)) and the proposed roadworks to be undertaken by the Highways Department under a separate project (PWP Item 225CL (Ph.1)).

In the following sections of this EIA report, the proposed works to be carried out under CE34/93 and the separate roadworks to be undertaken by the Highways Department will be collectively referred to as the "proposed projects" for simplicity.

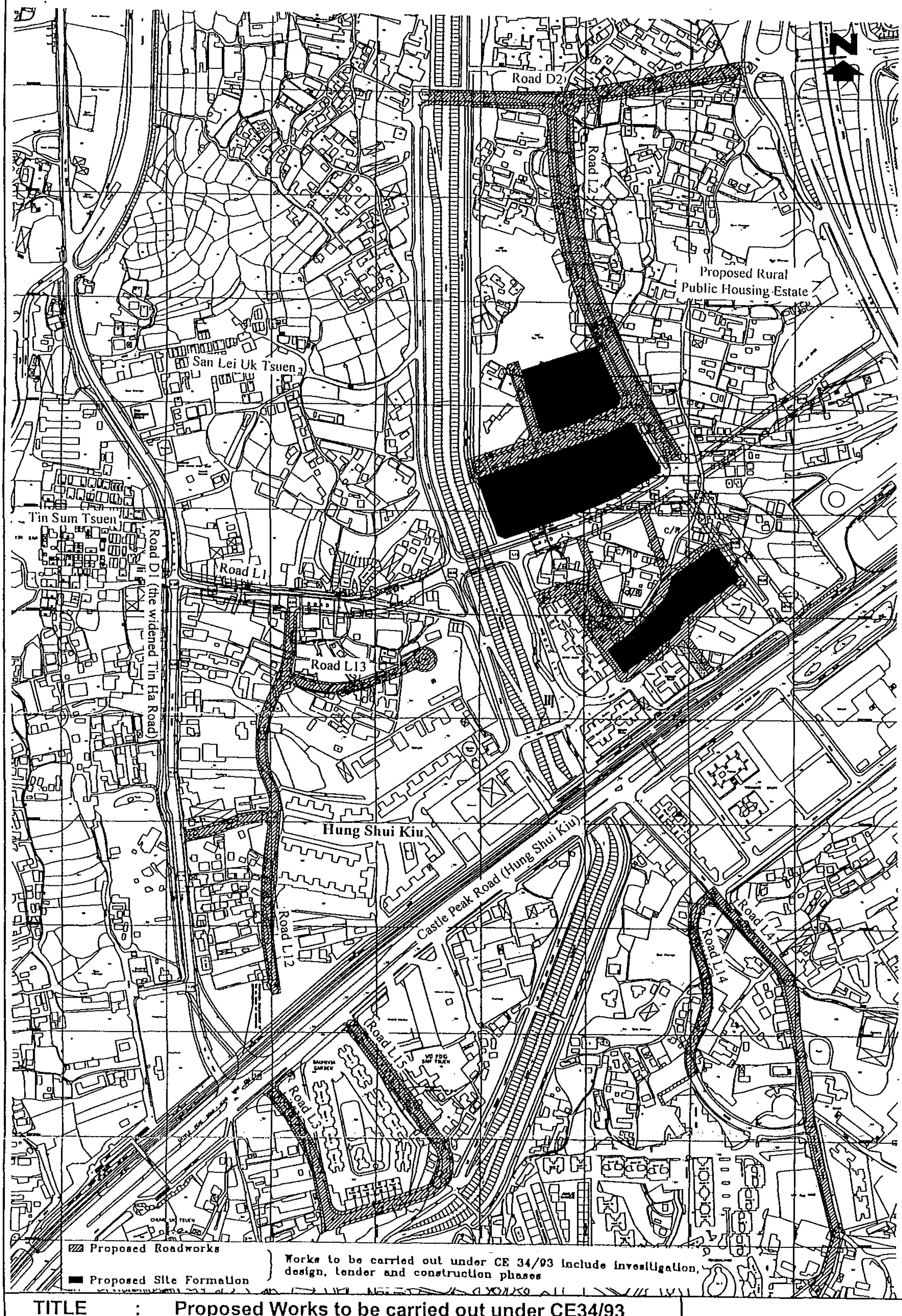
This EIA study focuses on the following environmental issues :-

(i) Background Environmental Quality :-
  - ambient TSP, NO_2 and CO level monitoring; and
  - existing industrial emissions affecting the study area.

(ii) Construction phase:-
  - air quality impact due to fugitive dust emission;
  - noise impact generated from construction activities; and
  - review the standard pollution control clauses provided with the Study Brief and advise the appropriate clauses to be included in the Contract Documents.

(iii) Operational phase:-
  - air quality impact resulted from vehicular emission; and
  - traffic noise impact

(iv) Environmental Monitoring & Audit (ref.: R817/0896; a stand-alone document as required by the study brief) :-
  - construction phase consideration; and
  - operational phase consideration.



TITLE : Proposed Works to be carried out under CE34/93 (PWP Items 225CL and 253CL)

PROJECT : Territory Development Department (CE34/93) EIA Study for Hung Shui Kiu

Figure : 1-1

Scale : ---

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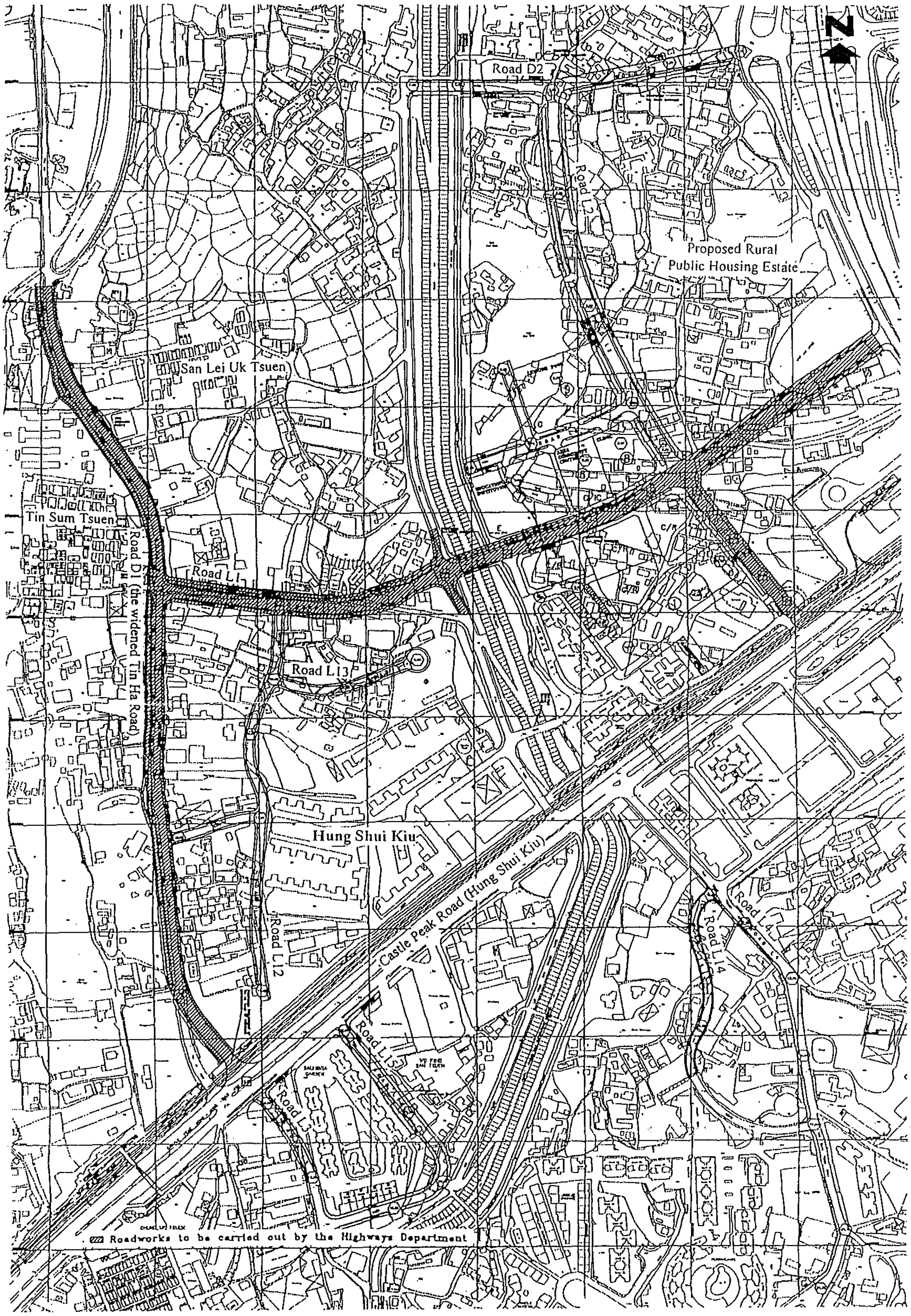

TITLE	:	Proposed Works to be carried out by Highways Department (PWP Item 225CL)		
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
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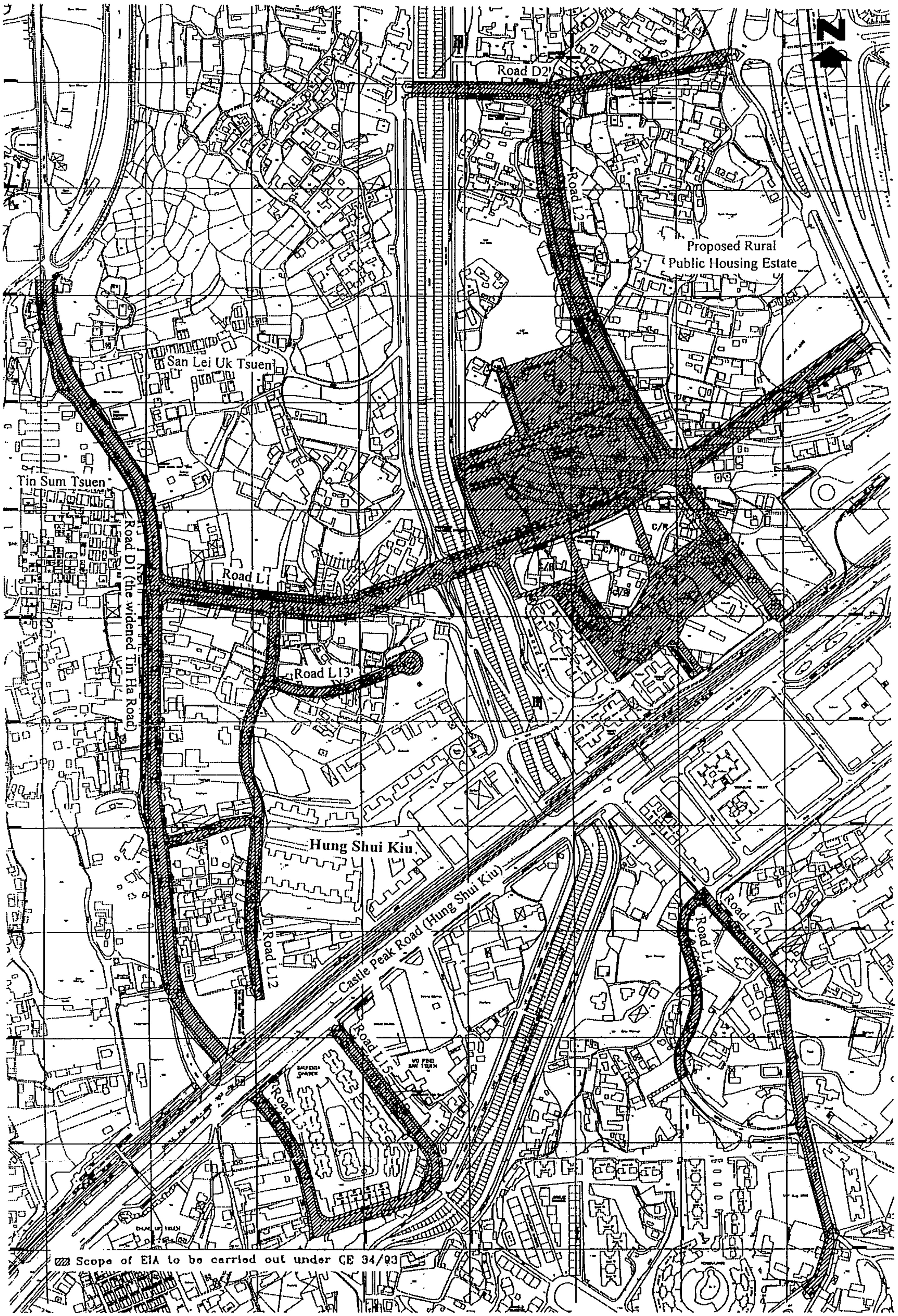

TITLE :	Scope of the EIA to be carried out under CE34/93		
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
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2. PROJECT DESCRIPTION

2.1 General Description

As mentioned in Section 1.3, this EIA will address the potential environmental impact associated with the construction and operational phases of the proposed projects, which involves the proposed works to be carried out under CE34/93 and the roadworks to be undertaken by the Highways Department.

The scope of the engineering works to be carried out under CE34/93 as shown in Figure 1-2 includes:-

(i) site formation of about 2.2 hectare of land for various government and public uses (Planning Areas 1, 6 to 9 as marked on Figure 1-1) and for a lorry/car park, footpaths and bicycle parks;

(ii) construction of about 3.4 km of access roads;

(iii) construction of cycle tracks and footpaths;

(iv) construction of road drainage, sewers and associated works; and

(v) landscaping and any environmental impact abatement works.

The proposed works will mainly involve the construction of local access roads whilst site formation will provide land for a district open space, a community centre, a primary school, a clinic and a leisure pool to be developed at Area Nos. 1, 6, 7, 8, and 9 respectively.

The scope of the proposed roadworks to be undertaken by the Highways Department as shown in Figure 1-2 includes:-

(i) construction of road L1 and the associated cycle tracks and footpaths;

(ii) construction of the section of road L2 not covered under CE34/93 and the associated cycle tracks and footpaths;

(iii) widening of a section of the existing Tin Ha road from the existing 6.75m to the future 10.3m (the road will remain a single two-lane carriageway with an unchanged speed limit of 50km/hr) and the construction of the associated cycle tracks and footpaths; and

(iv) realignment of a section of Tin Ha road adjacent to Castle Peak road.

The design, layout and level of the proposed new roads (D2, L1 to L6, and L12 to L15) and improved road (D1; formed from the existing Tin Ha Road) to be constructed under the two projects are shown in Figures 2-1.

2.2 Construction Phase Consideration

In the absence of a concrete construction schedule and equipment lists at this early planning stage for the proposed projects, assessment of air quality and noise impact during the construction phase has been based on reasonably assumed construction activities and schedules which are comparable to the normal practices, but with due consideration of the local situation and site constraints. This tentative construction schedule is shown in Table 2-1 below :

Table 2-1 Construction Activities and Schedules of the Proposed Projects

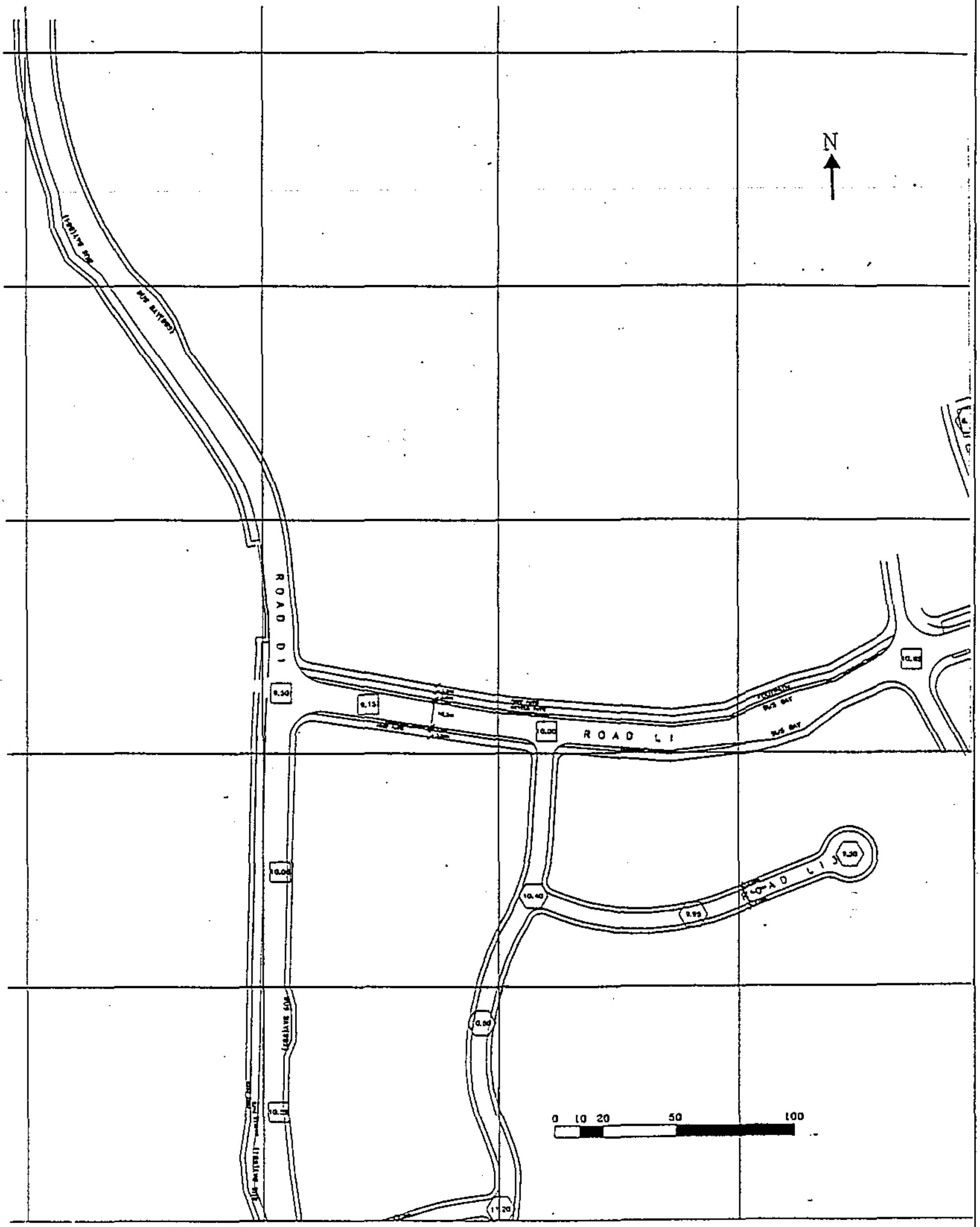
Stage	**Description**
1	Site clearance, excavation and earthworks for alignment and site formation;
2	Percussive piling at foundation locations for nullah crossing plus its formation;
3	Installation of drainage, utilities and manhole plus construction of retaining walls;
4	Formation of road sub-base; and
5	Road surfacing and finishing works

Location of the nullah crossings (PL1 and PL2) at which percussive piling will be required under the proposed projects is shown in Figure 2-2.

It is envisaged that the roadworks to be carried out by the Highways Department will commence earlier than the proposed works to be undertaken under CE34/93 so that the cumulative air quality and noise impacts would be lower than if they were taking place concurrently. However, in the absence of a concrete construction schedule, we have adopted a conservative approach and have assessed the worst case scenario by assuming that both roadworks operate at the same time.

2.3 Operational Phase Consideration

The major concerns related to the operational phase of the proposed road scheme are in terms of traffic noise and vehicular emission impacts. Technical assessments have been conducted to review the possible environmental effects with regard to the proposed road scheme upon existing sensitive receivers and future sensitive developments in the area. Traffic data for the assessment was provided by the Project Traffic Consultant.



TITLE :	The Proposed New Roads and Improved Road		
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
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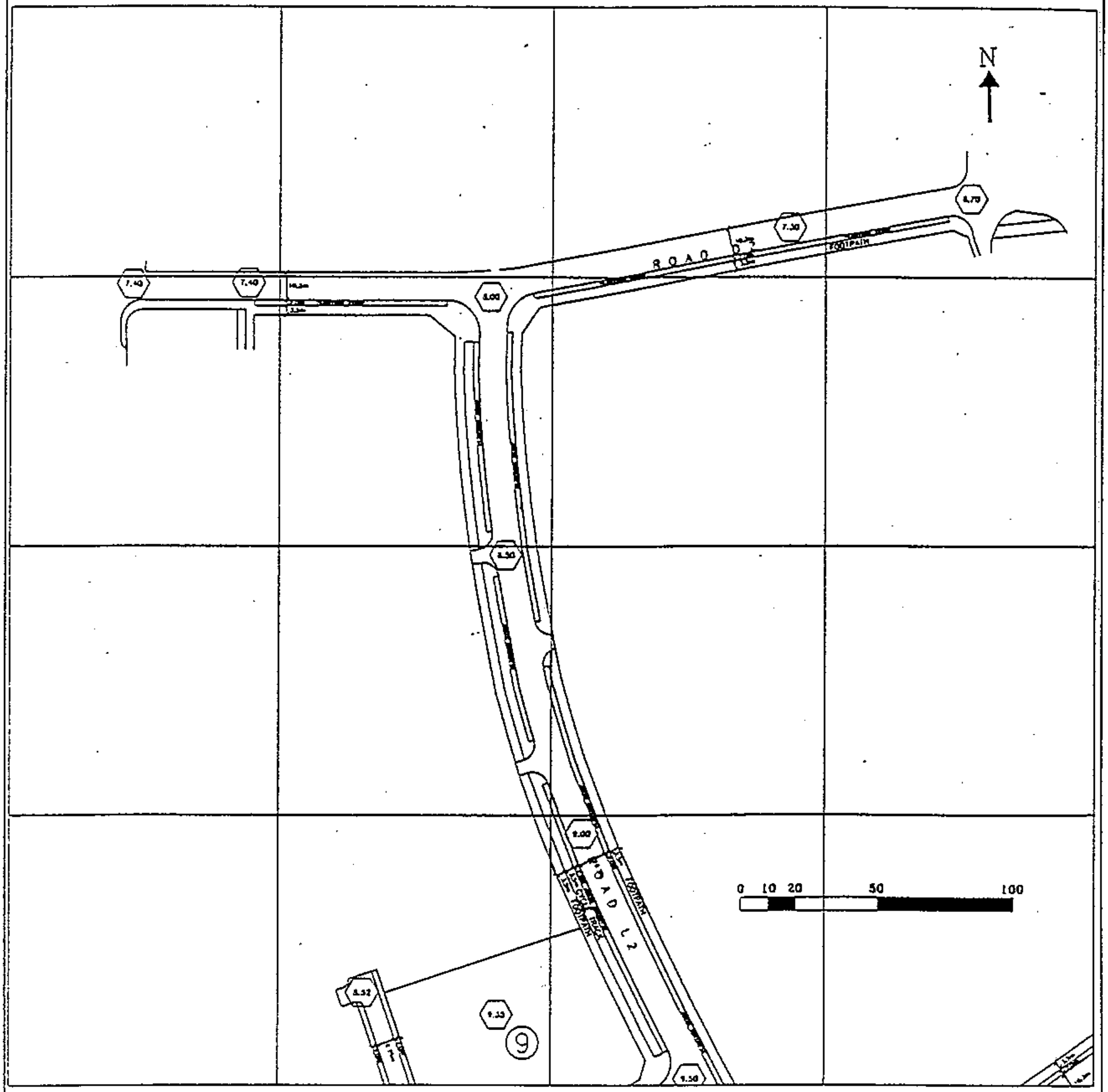

TITLE :	The Proposed New Roads and Improved Road
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu
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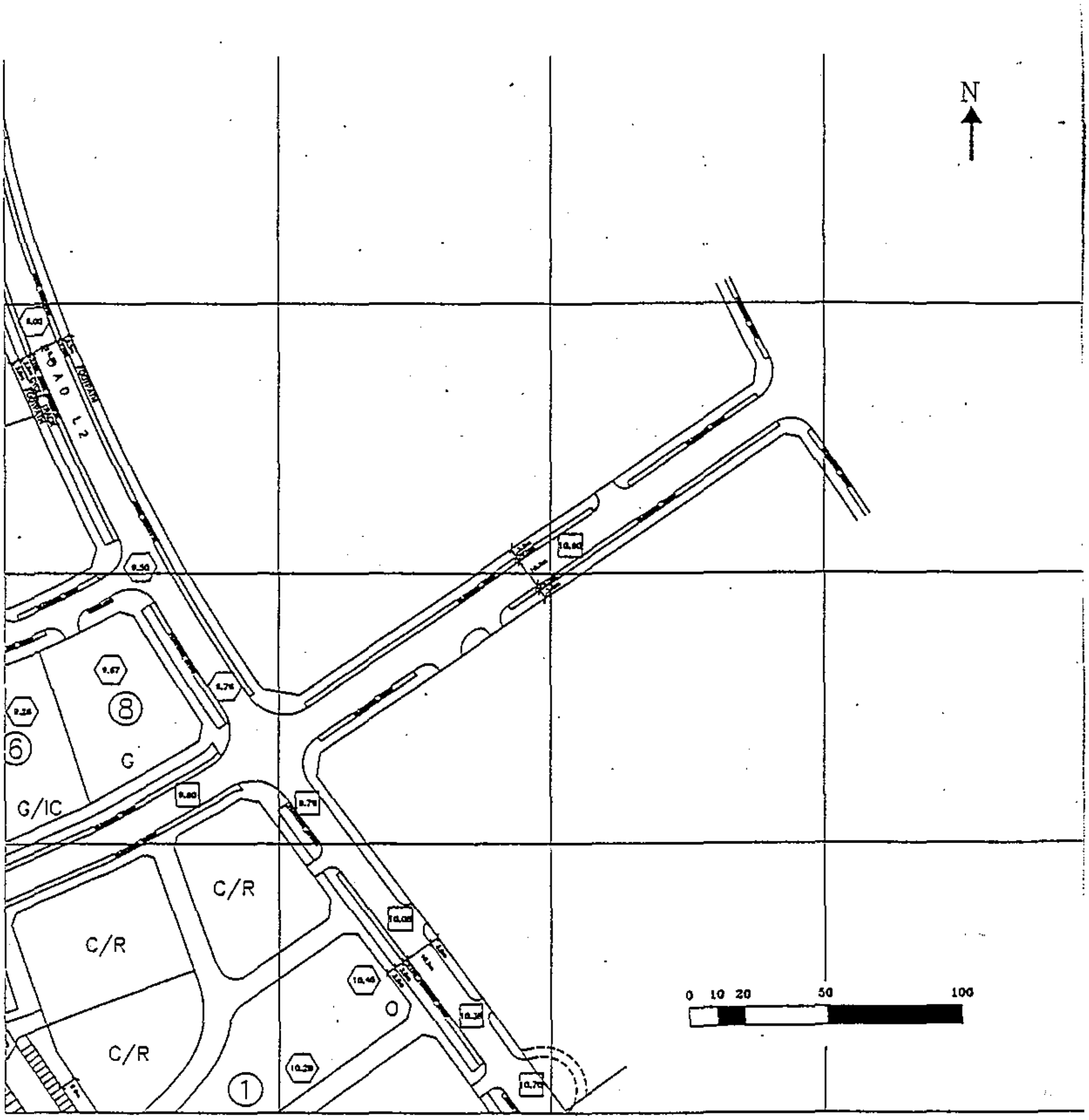

TITLE : The Proposed New Roads and Improved Road

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

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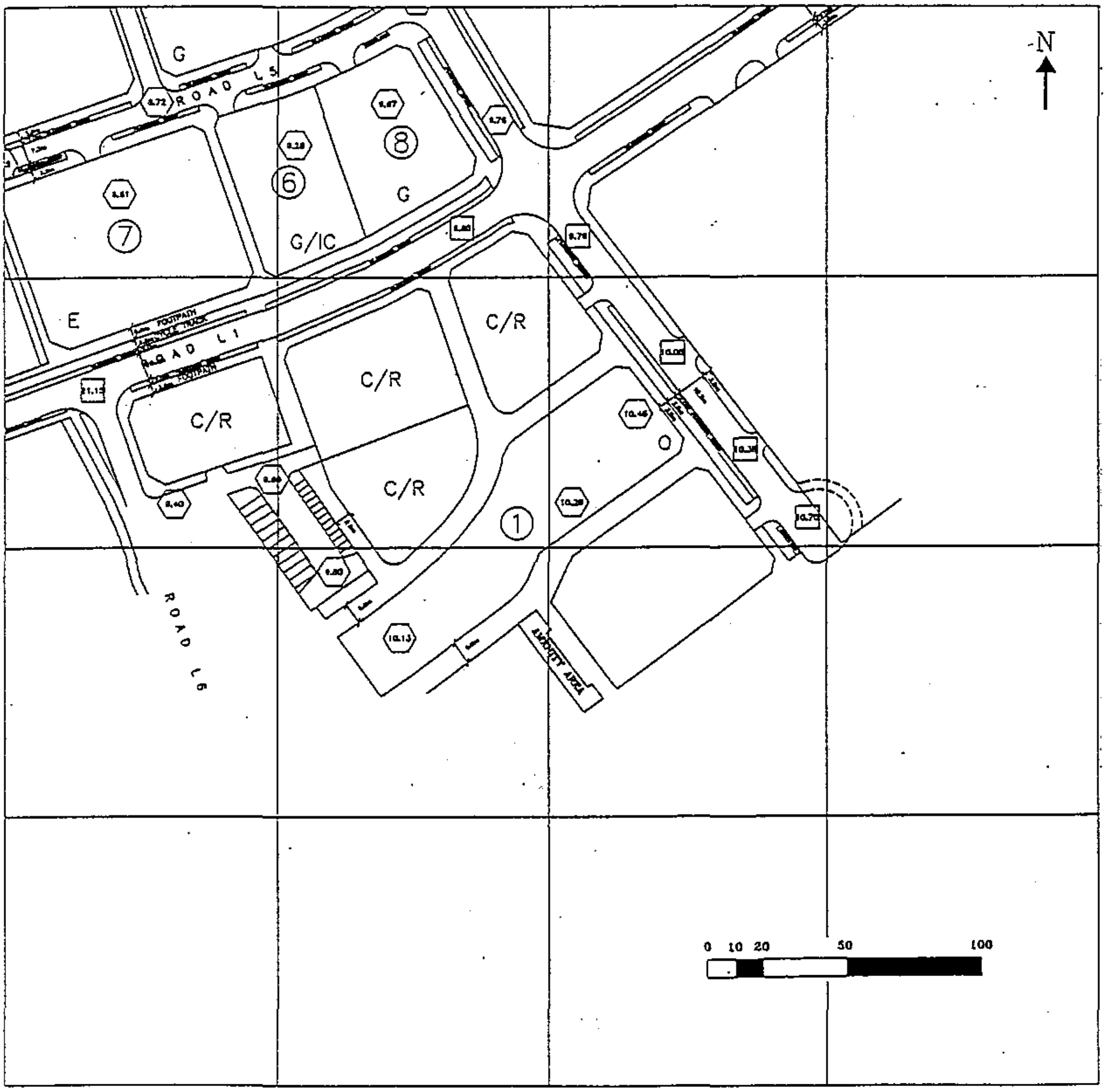

TITLE : The Proposed New Roads and Improved Road

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

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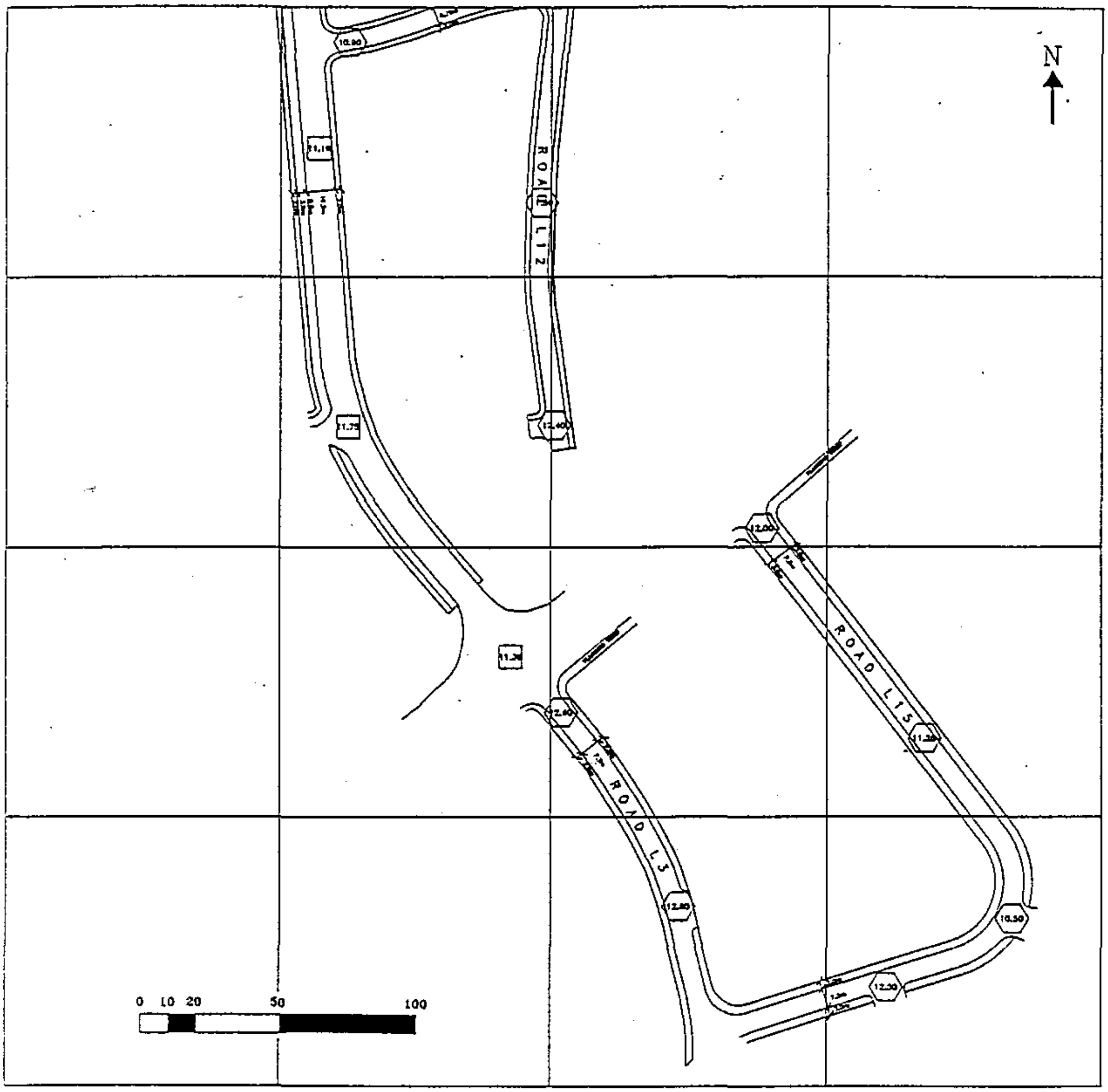

TITLE	:	The Proposed New Roads and Improved Road	
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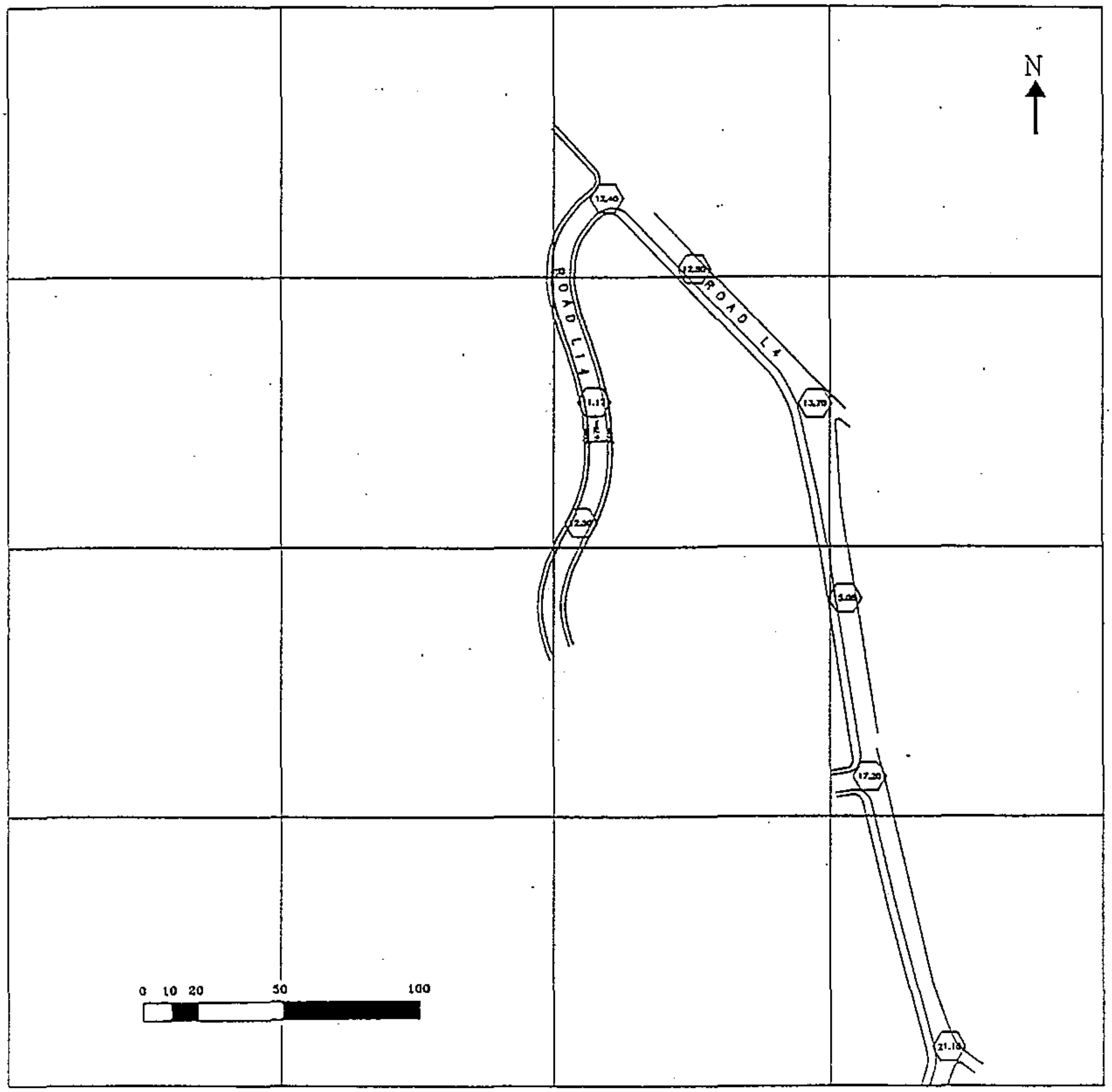

TITLE : **The Proposed New Roads and Improved Road**

PROJECT : **Territory Development Department (CE 34/93)**
EIA Study for Hung Shui Kiu

Figure : **2-1f** Scale : —

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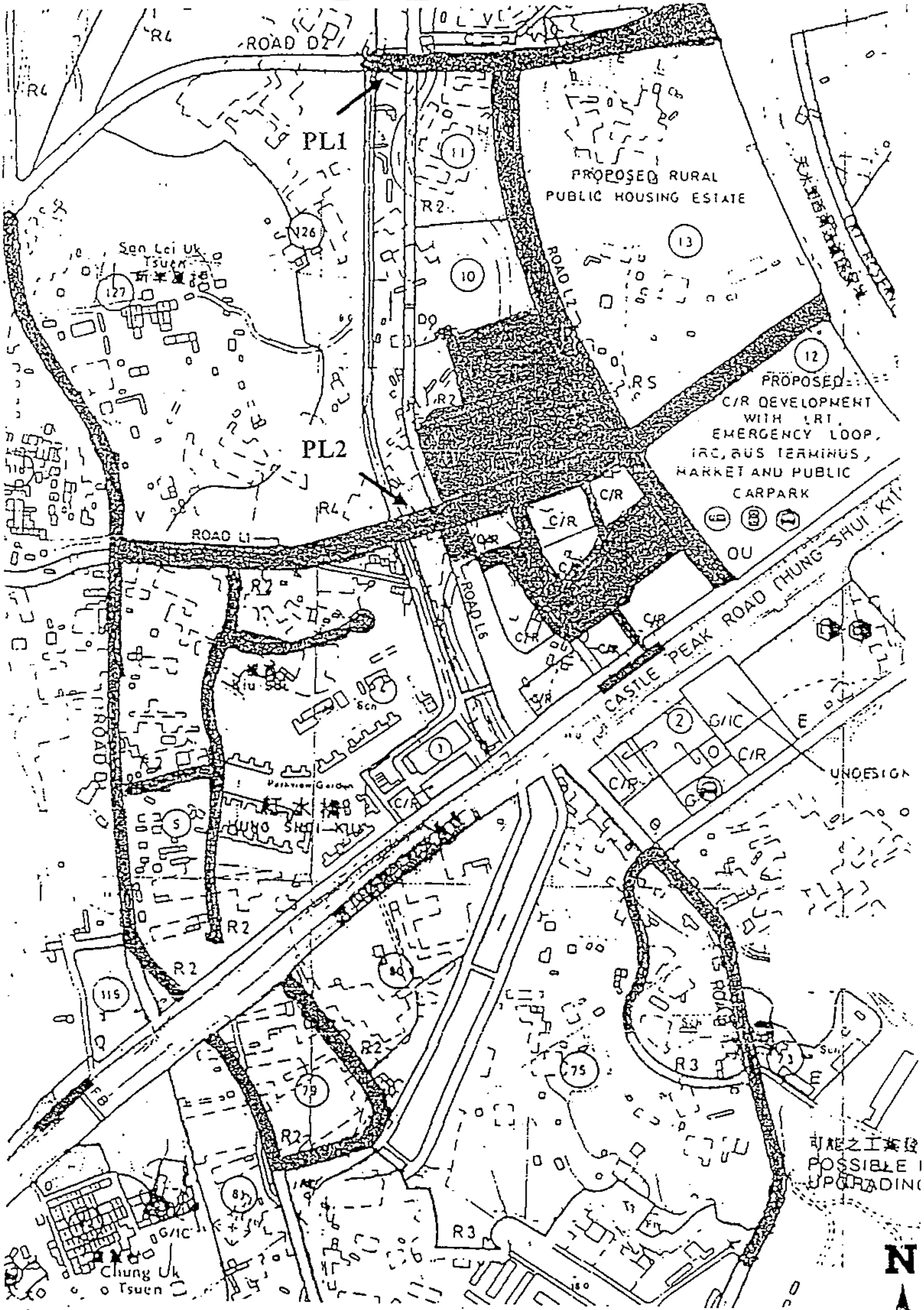

PL1 (Percussive Piling to be carried out under CE34/93)

PL2 (Percussive Piling to be carried out under 225CL)

TITLE	:	Location of the Nullah Crossings at which Percussive Piling will be invloved		
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
Figure	:	2-2	Scale :	—

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3. EXISTING ENVIRONMENT

3.1 Introduction

The existing and planned land uses and developments in the proximity of the proposed projects were conveyed by consulting District Lands Office, Planning Department, the Hong Kong Housing Society (HKHS) and through site inspections. The information obtained was used to identify existing and future sensitive receivers likely to be affected by the construction and operational phases of the proposed projects.

3.2 General Description of the Study Area

3.2.1 Existing Environment

The area around Hung Shui Kiu is in general topographically flat but is sloping gently at an inclination from south to north. Near Castle Peak Road the exiting ground level is about 12mPD whereas at the proposed road D2 the existing ground levels go down to about 7mPD. The existing population in the area is estimated to be about 4,200 with the majority of the population (about 53%) living in village houses, simple stone or temporary structures that are clustered together within villages. These include Chung Uk Tsuen, Wo Ping San Tsuen and Tan Kwai Tsuen that are located to the south of Castle Peak Road, and San Lei Uk Tsuen, Tin Sum Tsuen and Shek Po Tsuen situated to the north of the Road. Several private developments have been built in recent years in the area which include Parkview Garden, Coronet Court, the Bauhinlia Garden, and Meadowlands, etc. Other major land uses in the area include temporary industrial buildings and storage facilities, schools and agricultural land. The existing environment in the vicinity of the proposed project is shown in Figure 3-1.

3.2.2 Scheduled Future Land Uses

Despite the recent rapid development by private sectors in the area, Hung Shui Kiu is still mostly occupied by village houses, temporary industrial buildings, storage facilities and agricultural land. However, with continuous rapid development, especially after the operation of the proposed road scheme, it is anticipated that the existing rural features will soon be replaced by new designated land uses.

The scheduled future land uses in the neighbourhood of the proposed projects are well specified in three recently gazetted OZPs, namely, the Ping Shan OZP No. S/YL-PS/1 and the Tong Yan San Tsuen OZP No. S/YL-TYST/1 gazetted on 14th June 1996, and the Lam Tei Yick Yuen OZP No. S/TM-LTYY/1 gazetted on 7th June 1996. The population capacity of the Hung Shui Kiu area is expected to be around 34,000. The future land uses in Hung Shui Kiu have been extracted from the relevant OZPs and summarised in Figure 3-2.

3.3 Existing Industrial Sources

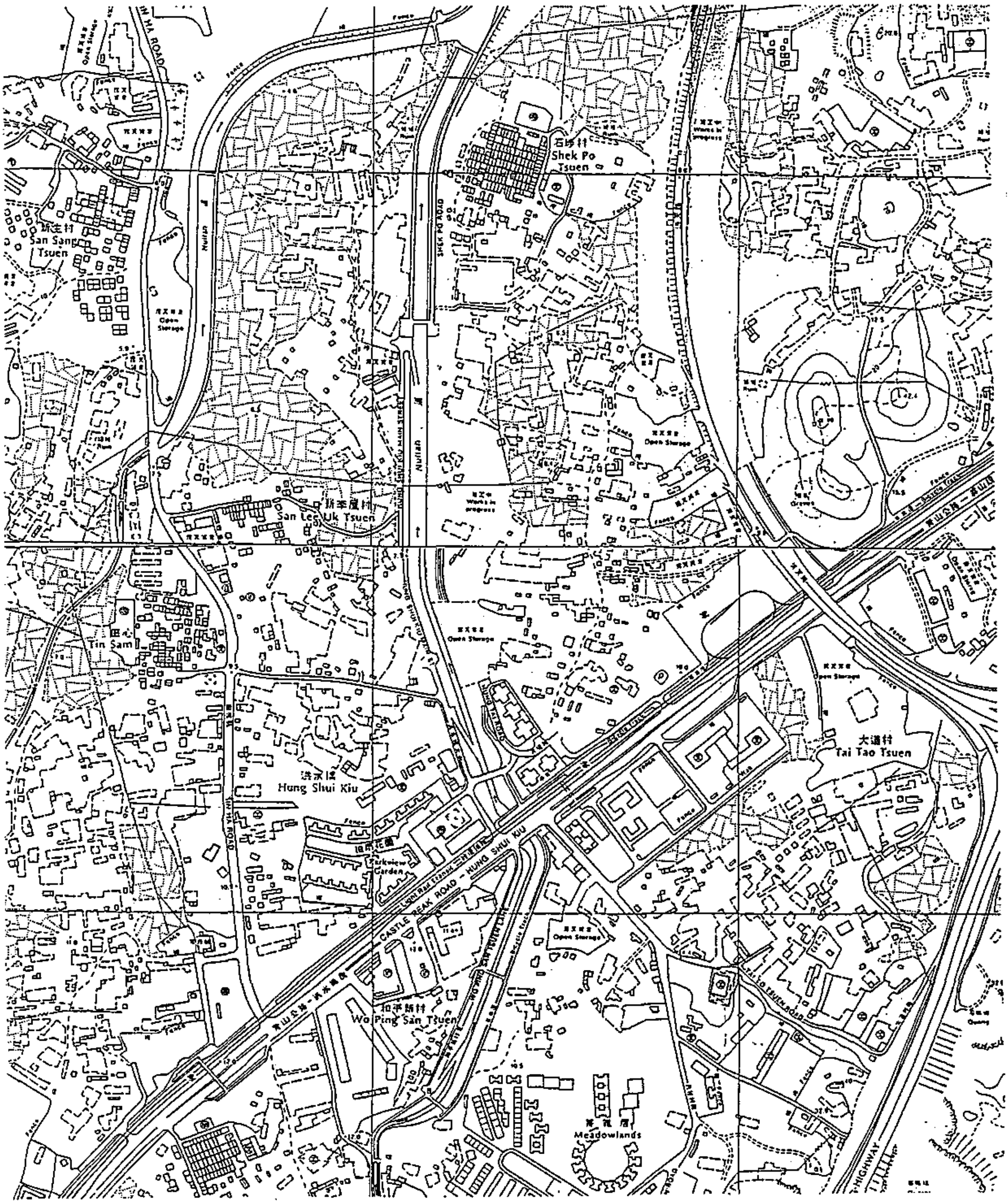
Industrial operations involving the burning of fuel are major emission sources of anthropogenic SO_2. The concentration and dispersion level of SO_2 emission are related to the type and age of the boiler, as well as the type and quantity of fuel consumption, chimney height and size, and the exit temperature of the emission. A total of 18 operating diesel fuel consuming stacks were identified in the proximity of the study area according to EPD's (Air Management Group) record in August 1995.

3.4 Existing and Committed Sensitive Receivers

From the above analysis of existing and scheduled land uses, sensitive receivers situated in the proximity of the proposed projects have been identified, based on definition as laid down in the Hong Kong Planning Standards and Guidelines (HKPSG) and Technical Memoranda of the relevant Pollution Control Ordinances.

Existing and committed sensitive receivers to be considered in this EIA include :-

- nurseries;
- homes for the aged;
- schools, including kindergarten;
- active recreational activities (for air quality impact assessment only);
- all domestic premises including temporary housing; and
- institutional uses.



TITLE	:	Existing Landuse in Hung Shui Kiu Area	
PROJECT :		Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu	
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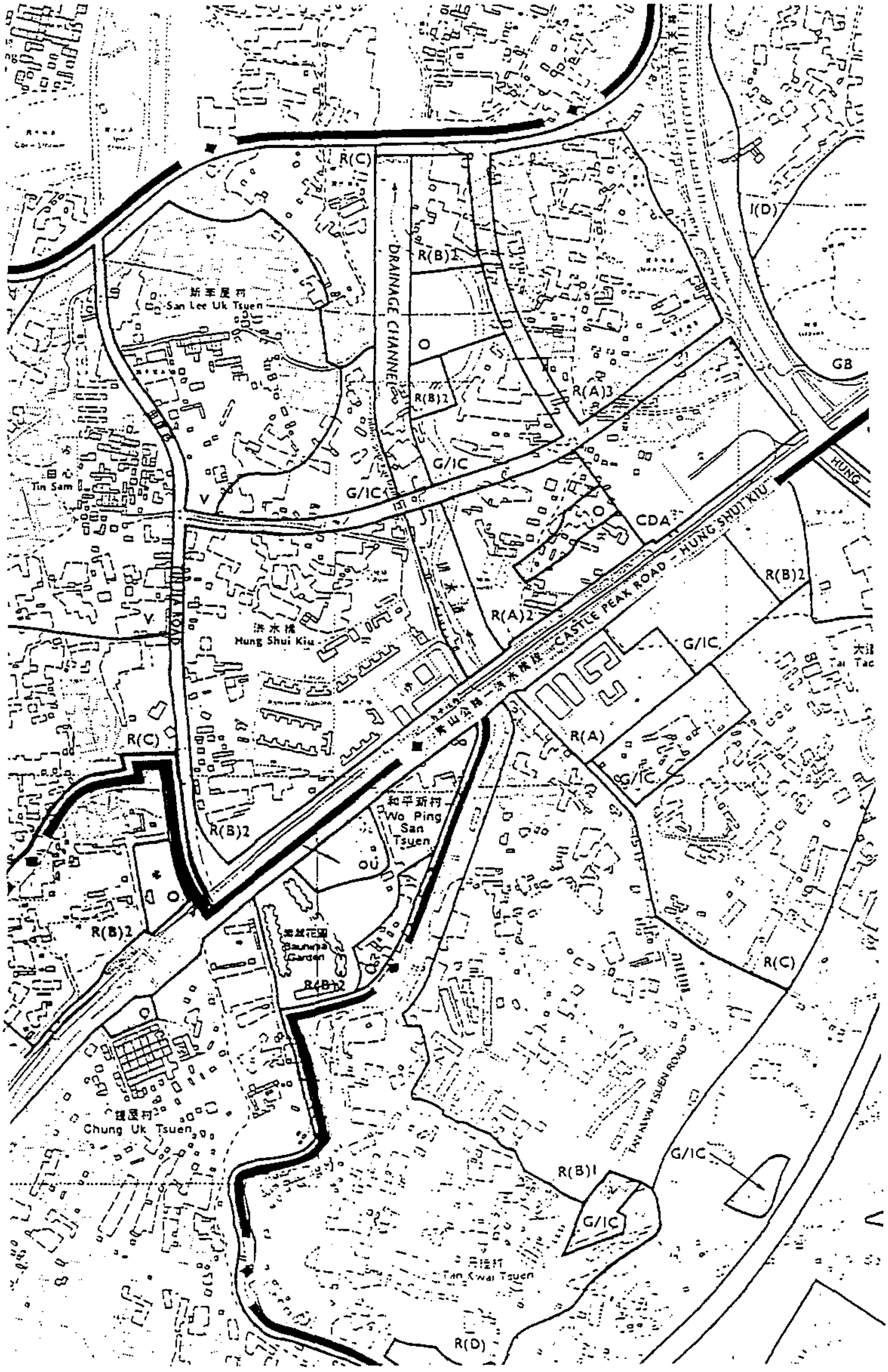

TITLE : Proposed Landuse in Hung Shui Kiu Area

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 3-2 Scale : —

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4. AIR QUALITY IMPACT ASSESSMENT

4.1 Introduction

This section contains discussion on the potential air quality impacts arising from the construction and operation of the proposed projects, and will include recommendations for mitigation measures if necessary. The assessment for the construction phase will concentrate on dust emission which is considered to be most appropriate. Impacts from nitrogen oxides (NO_x), sulphur dioxide (SO_2), and carbon monoxide (CO) will not be considered because significant emissions are unlikely. On the other hand, vehicular emissions will be considered during operational phase of the road scheme. Air pollutants of concern include CO, NO_x and Respirable Suspended Particulate (RSP). Both construction and operational air quality impacts are calculated quantitatively using air pollution modelling techniques. Ambient air quality and existing industrial emission impact of the study area will also be established.

4.2 Ambient Air Quality Monitoring

Since the Environmental Protection Department (EPD) does not operate any air quality monitoring stations in the vicinity of the study area, in order to establish the baseline condition, a temporary monitoring station was set up to measure the ambient level of the criteria pollutants in the area. The monitored pollutants include Total Suspended Particulate (TSP), Nitrogen Dioxide (NO_2) and Carbon Monoxide (CO). The monitoring exercise was carried out from 12th February 1996 to 6th March 1996 at the roof level of Shung Tak Catholic English College located at Hung Shui Kiu as shown in Figure 4-1.

4.2.1 Sampling Methodology

Total Suspended Particulate

Procedures for measurement of TSP was made reference to Part 50 of Chapter 1 Appendix B of the Code of Federal Regulation of the USA. The mass concentration of TSP in ambient air was determined by a high volume air sampler which drew a measured quantity of air into a covered housing and through a filter during a specified sampling period (1 or 24 hours). The filter was weighed before and after use to determine the net weight gain. The total volume of air sampled was calculated form the measured flow rate and the sampling time.

Nitrogen Dioxide

Procedures for measurement of NO_2 was made reference to ASTM Standard D1607. The air sample was drawn through an azo-dye-forming agent by using a constant low-flow air sampler (SKC Model No. 222-4). A red-violet colour was developed after sampling and the intensity of which was measured spectrophotometrically at 550mm.

Carbon Monoxide

Real-time Carbon Monoxide levels were monitored quantitatively by Brüel & Kjær Multi-gas Monitor Type 1302. Measurements were carried out during the monitoring period. Its measurement principle is based on photo-acoustic infra-red detection method.

Figure : 4-1

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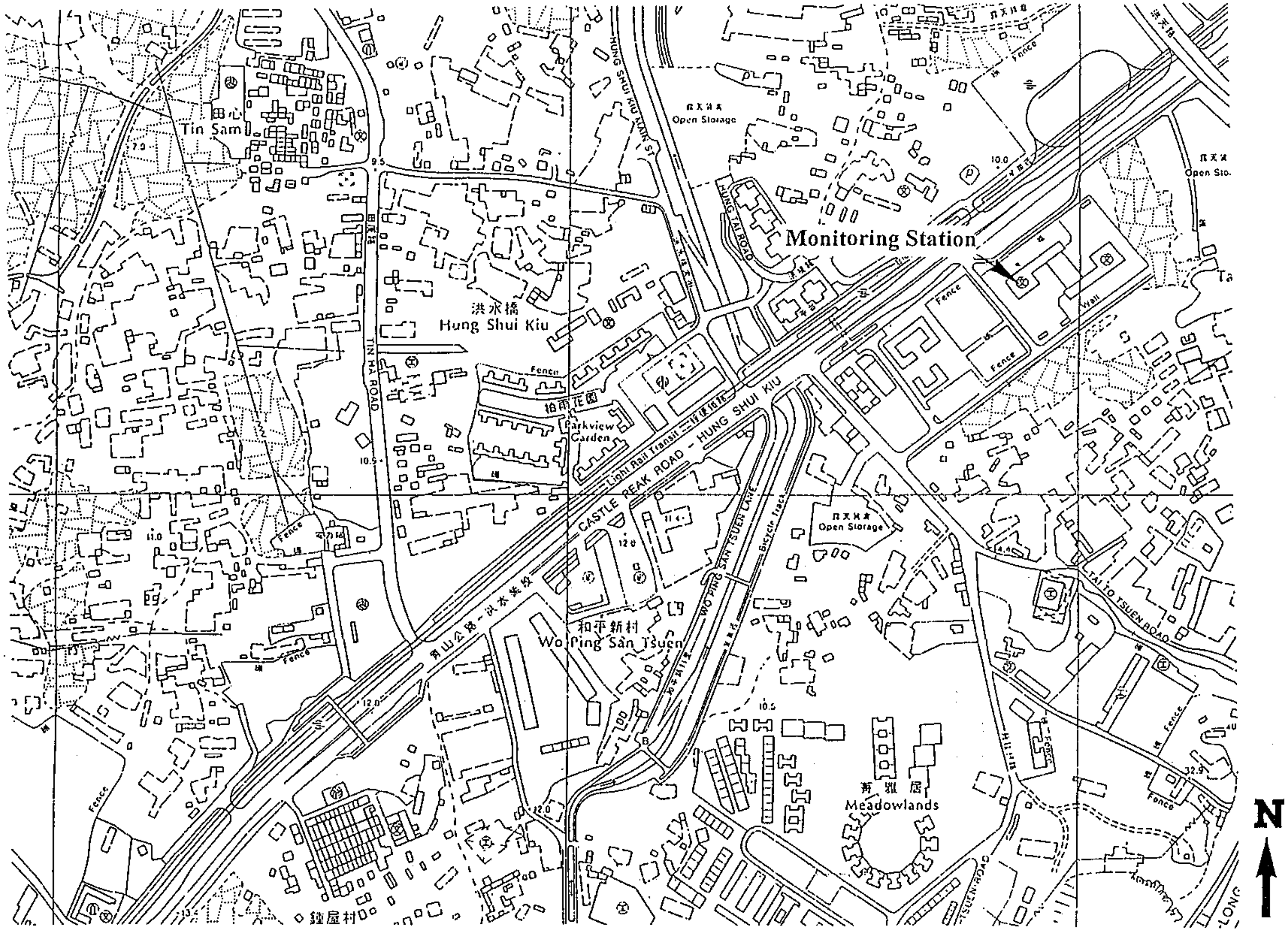

TITLE : Location of Baseline Monitoring Station

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

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4.2.2 Monitoring Programme

The measurement of NO_2 and TSP was carried out in two phases. The first section (from 13 February 1996 to 28 February 1996) consisted of measurement of both NO_2 and TSP. NO_2 in ambient air was sampled during peak hours. Hourly TSP was measured 4 times per day by one high volume air sampler and continuously for 24 hours by another high volume sampler. Section 2 (from 29 February 1996 to 6 March 1996) involved monitoring of 24-hour average TSP level only. Real-time measurement of CO was carried out on both 9th February 1996 and 27th February 1996.

4.2.3 Summary of Results

The monitored ambient hourly and daily average concentration of TSP, CO and NO_2 monitored are summarized in Table 4-1.

Table 4-1 Ambient Air Quality of the Study Area

Criteria Pollutant	**Time Period - Concentration ($\mu g/m^3$)**	
	1 hour	***Daily***
TSP	86.0	98.0
CO	681	N.A.
NO_2	35.0	N.A.

The monitored 1-hour TSP levels were found to be on the low side when compared with the monitored daily average TSP level. This is probably due to the limited sampling frequency employed (4 times per day only) in measuring 1-hour TSP levels. The monitored average 1-hour TSP levels shall therefore be taken as a reference only.

4.3 Anthropogenic Sulphur Dioxide Concentration

Industrial operations involving the burning of solid and fossil fuel are major emission sources of anthropogenic sulphur dioxide. The concentration and dispersion of SO_2 are related to the type and age of the boiler, as well as the type and quantity of fuel consumption, chimney height and size, and the exit temperature of the emission.

The locations and details of all licensed fuel consuming stacks within 1km radius of the subject site were obtained from the Air Management Group of the EPD. A total of 18 diesel fuel consuming stacks were identified in the proximity of the subject and the data obtained was mostly updated from November 1990 to August 1995.

4.3.1 Computer Modelling and Assessment Results

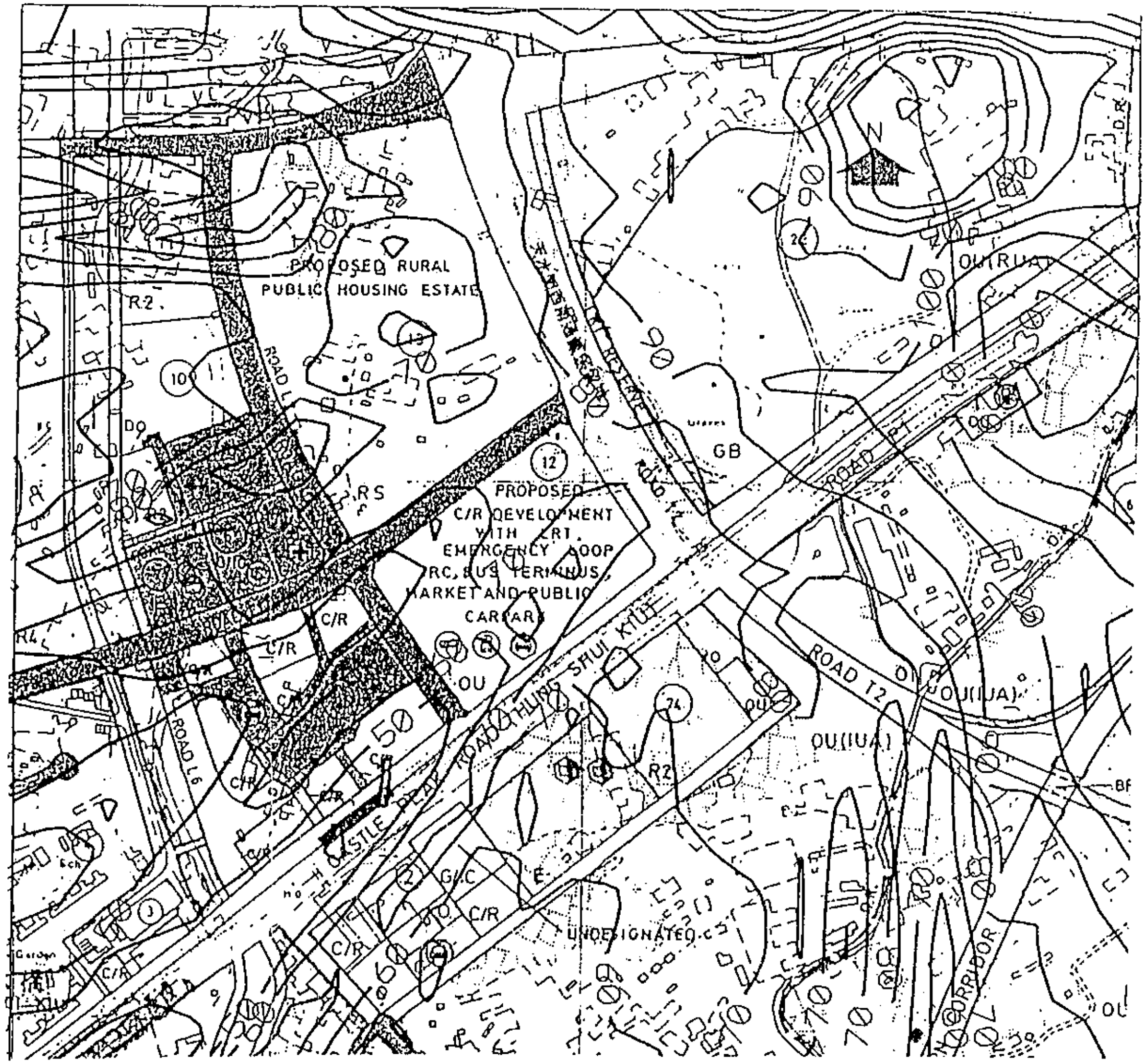
The dispersion of SO_2 from the identified chimneys was studied to indicate the level of anthropogenic SO_2 of the study area. Modelling was carried out using the software "Industrial Source Complex Short Term (ISCST)" developed by Trinity Consultants Incorporated. This model is based on the principle of Gaussian dispersion and is broadly acceptable to authorities world-wide including the United States Environmental Protection Agency (USEPA) and the Hong Kong Environmental Protection Department (EPD). Meteorological data for the year 1994 from the Royal Observatory's Lau Fau Shan Weather Station was employed in the modelling.

According to the Air Pollution Control (Fuel Restriction) regulation introduced on 25th January 1990 under Regulation 43 of the Air Pollution Control Ordinance, Sulphur content of liquid fuel is not allowed to exceed 0.5% w/w and a viscosity under 6 centistokes at 40°C. This restriction was applied and used as a supposition in the calculation of the emission strength of the stacks.

The predicted highest hourly SO_2 concentration at 1.5m above ground level was superimposed onto survey map of the study area as shown in Figure 4-2. The predicted results were well within the relevant AQO Standards. The ISCST result file is enclosed in Appendix 1 for reference.

Figure : 4-2

Scale : ---



TITLE : Anthroogenic SO_2 Level of the Study Area

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

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4.4 Construction Phase Impact

4.4.1 Introduction

The major air quality impact during the construction phase of the proposed projects will be dust emissions from various dust-generating processes. Since all construction activities situated close to existing residential areas can cause some degree of nuisance to the residents, effective mitigation measures must be adopted through the use of statutory powers and implemented by contract requirements overseen by the resident engineer.

The impact of dust on ASRs depends primarily on the drift distance of dust particles which are in turn governed by the initial injection height, the terminal settling velocity, atmospheric turbulence and settling rates of the particulate under both calm and windy conditions. Particles with a size greater than 30μm can be settled within a few metres from source under typical wind conditions. Smaller particles have much slower rates of settling and are therefore more readily affected by wind turbulence.

Emissions from diesel trucks for the haulage of materials and construction plants will contain high percentage of smoke particulate and unburnt hydrocarbons in comparison with petrol driven vehicles. However, as the anticipated traffic volume and the number of construction plants that will result from the construction works are unlikely to be high, no significant impacts on the existing air quality are envisaged.

4.4.2 Identification of Major Dust Sources for Modelling

With the construction activities divided into 5 stages as shown in section 2.2, the major dust emitting processes during the various construction stages are expected to fall into the following main categories.

- excavation/ earthworks for road alignment and site formation;
- vehicle movement on unpaved haul roads on site; and
- material handling.

It is assumed that there is no concrete batching plant and stockpile situated within the work site.

Excavation and Earthworks

As the area around Hung Shui Kiu is in general topographically flat, large scale excavations or earthworks will not be required for the proposed projects. It is anticipated that only about 0.5m of top soil along the proposed road network and site formation area will be excavated for road alignment and site formation.

Vehicles Movement over Site Roads

Dust generated from the movement of vehicles on the work area could be a major concern. The emission factor for dust emission from vehicle movement is highly variable, but determining factors include vehicle speed and weight, surface silt loading, moisture content, etc.

Material Handling

Excavated materials or spoil have to be removed from the construction site by lorries for disposal and significant dust emission could result during the loading and unloading of the material.

4.4.3 Dust Emission Impact Assessment

Assessment Criteria

The principal legislation that is relevant to air pollution from construction sites is the Air Pollution Control Ordinance (APCO) (Cap. 311). The whole of the Hong Kong Territory is covered by the Hong Kong Air Quality Objectives (HKAQOs) which stipulate the statutory limits of TSP and RSP and the maximum allowable numbers of exceedance over specific periods. Relevant AQOs for TSP and RSP are extracted from Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) and are tabulated below. Besides, for construction dust, EPD recommends a maximum level of hourly TSP of 500μg/m^3 at the boundary of any construction site.

Table 4-2 Hong Kong Air Quality Objectives

Averaging Time	***Pollution Concentration Level (μg/m^3)***	
	Total Suspended Particulate	**Respirable Suspended Particulate**
1 hour^1	500*	N.A.
24 hour^2	260.0	180.0
Annual^3	80.0	55.0

(1) Not to be exceeded more than three times per year.
(2) Not to be exceeded more than once per year.
(3) Arithmetic means.
N.A. Not available
* Recommended by EPD

Assessment Methodology

The dispersion of dust resulting from the construction of the road scheme has been studied and modelled using the computer software "Fugitive Dust Model (FDM)" developed by Trinity Consultants Inc. The model is based on the principle of Gaussian dispersion and is widely recognized by HKEPD and USEPA for that purpose. The model is designed to predict fugitive dust concentration from point, line, area, and volume sources.

Particulate emission rates for the identified dusty sources were determined based on the US EPA publication *Complication of Air Pollution Emission Factors* (AP-42) and are given in Appendix 2 for reference. Dust sources resulting from excavation and material handling have been modelled as point sources with location, dust generation rate and particulate density provided as inputs whilst dust generation resulting from traffic movement on access roads were considered to be line sources. Average dust density of 2500 kg/m^3 has been assumed in the study.

The distribution of particulate size as shown in page one of *Appendix 3 Typical FDM Result File for the Dust Emission Impact Assessment* has been developed based on available information extracted from "*Guide to Rock and Soil Descriptions*" issued by the Geotechnical Control Office, Civil Engineering Services Department, Hong Kong, assuming that about 20% of the particulates are respirable with size equal to or less than 10μm.

Meteorological data (wind speed, wind direction, stability class, temperature and mixing height) of the year 1994 from the Lau Fau Shan Weather Station was obtained from the Royal Observatory and used in the modelling. Both the worst case scenario of one hour and twenty-four hour average TSP levels were calculated.

In the absence of a concrete construction programme at this stage of the assessment, a conservative approach has been adopted by assuming that all dusty construction activities would be carried out in parallel over a 12 hour working day to represent the worst case scenario. The working hours will be restricted to 0700 to 1900 hours, due to the requirement for minimising construction noise impact as presented in Section 5 of this report.

Background Air Quality for the Impact Assessment

The background dust level for the construction dust impact assessment was made reference to the monitored TSP levels in the study area (see Section 4.2.3) as well as those monitored in EPD's ambient monitoring stations located throughout the Territory. EPD recorded an annual average ambient TSP levels of about 99.4μg/m^3, 109μg/m^3, 98μg/m^3, and 87.2μg/m^3 for Kwun Tong, Sham Shui Po, Tusen Wan and Kwai Chung respectively[1], with an average of about 98.4μg/m^3. Concerning the dust emission impact assessment for the proposed projects, the background TSP concentration has been taken to be 98μg/m^3.

Air Sensitive Receivers (ASRs)

Existing village houses and recently built private developments located in close proximity to the proposed road network have been identified as the worst affected locations for the dust emission impact assessment. Representative locations were chosen and inputted into the "Fugitive Dust Model". As most of the sensitive receivers are low-rise buildings, dust level have been modelled at 1.5m, 3.0m and 5.0m above ground. Dust concentrations are expected to drop with increasing height and hence dust concentrations at high level are expected to be insignificant. Identity and location of the selected ASRs are shown in Table 4-3 and Figure 4-3, respectively.

Table 4-3 Identified worst-hit ASRs for the Dust Emission Impact Assessment

Label	Air Sensitive Receivers	No. of Storeys
A1	Playground	N/A
A2	Parkview Garden	4
A3	Village House	2
A4	Village House	2
A5	Coronet Court	10
A6	Bauhinia Garden	7
A7	Village House	1
A8	Church	2

---

[1] Averaged values for the years 1990 to 1994, extracted from "*Air Quality in Hong Kong - Results from the Air Quality Monitoring Network*" (Years 1990 to 1994) published by the Environmental Protection Department.

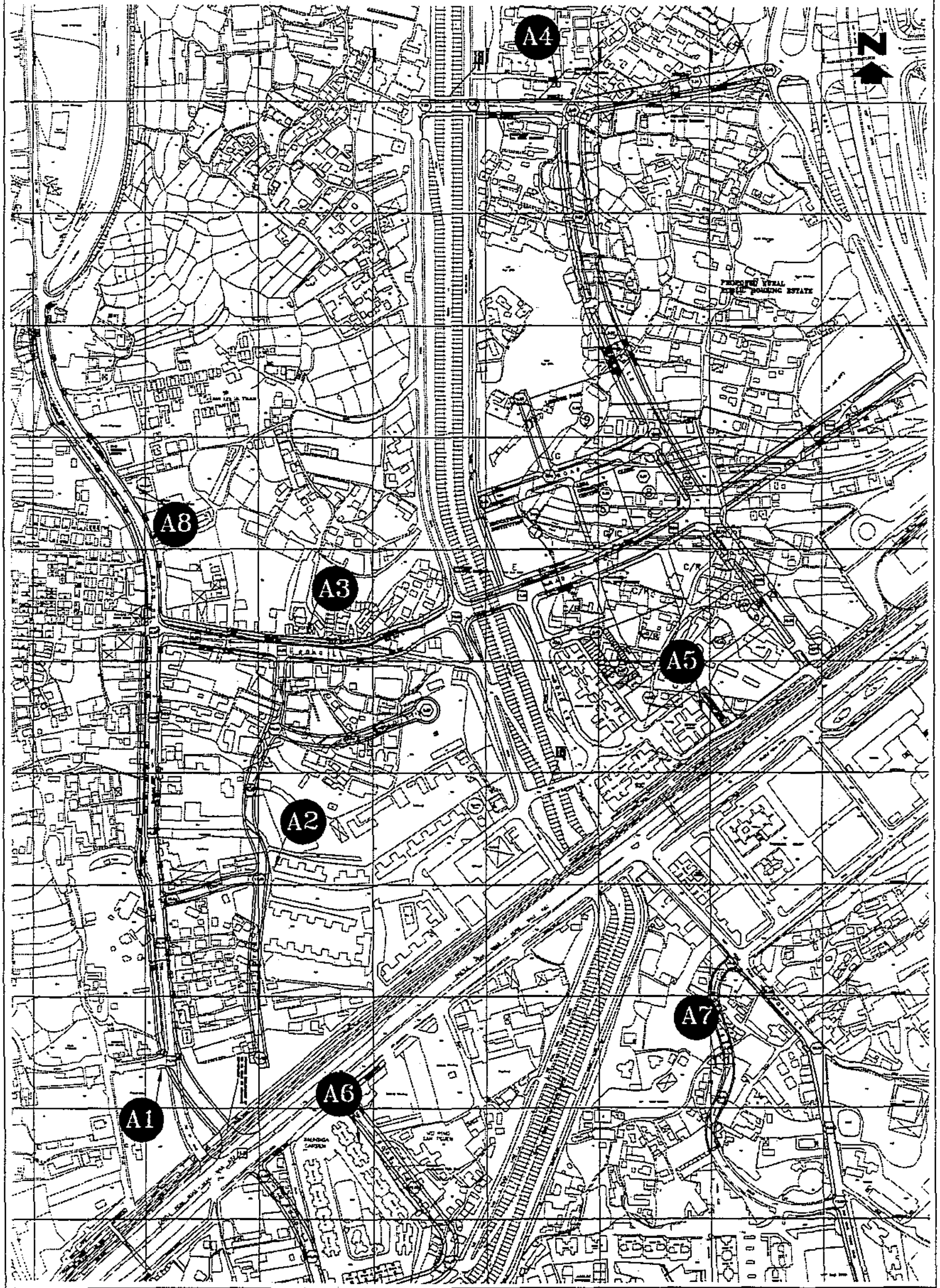
Modelling Results

The predicted highest hourly and daily dust level at the selected worst impacted ARSs at 1.5m, 3.0m and 5.0m from ground are shown in Table 4-4. Dust levels exceeding the AQOs are shown in bold. The modelled results indicates that, in the absence of any dust mitigation measure, the air quality criteria will likely be exceeded at some of the selected ASRs during the construction phase. Typical FDM result file is enclosed in Appendix 3 for information.

Table 4-4 Predicted TSP Level at the selected ASRs (Without Mitigation Measures)

ASRs	Predicted TSP Concentration (μg/m³) at various distance from ground					
	Highest Hourly			Highest Daily		
	1.5m	3.0m	5.0m	1.5m	3.0m	5.0m
A1	**541**	258	138	239	157	106
A2	**1088**	235	116	**383**	156	101
A3	**653**	261	129	**294**	161	103
A4	**542**	244	136	225	153	107
A5	333	191	145	145	130	114
A6	**995**	249	121	**360**	156	101
A7	**924**	235	124	**334**	155	103
A8	**888**	259	128	**328**	168	105

N.B. : The background TSP of 98μg/m³ is included in the results.



TITLE : **Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment**

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 4-3a
Scale : —

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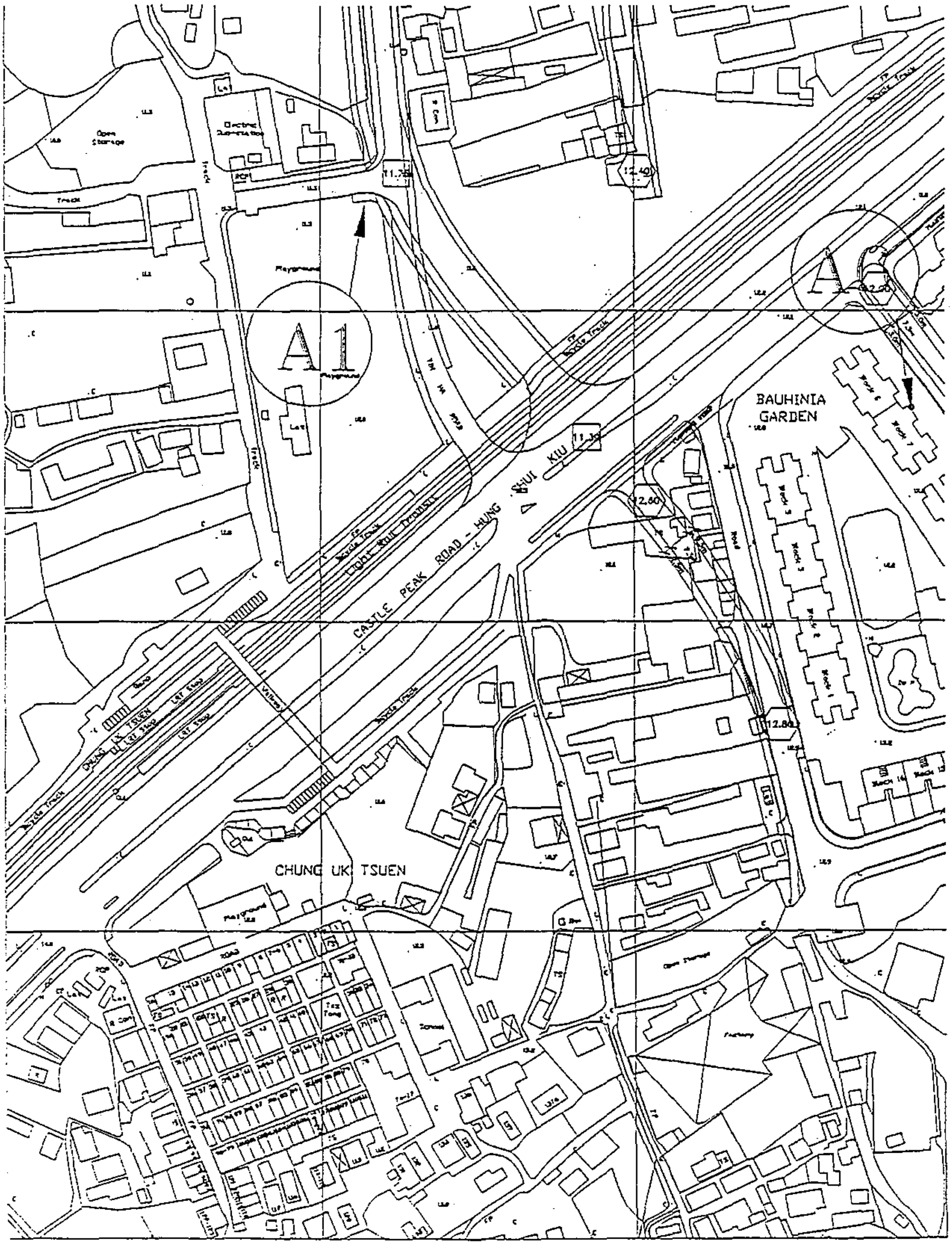

TITLE	:	Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment			
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu			
Figure	:	4-3b	Scale	:	—

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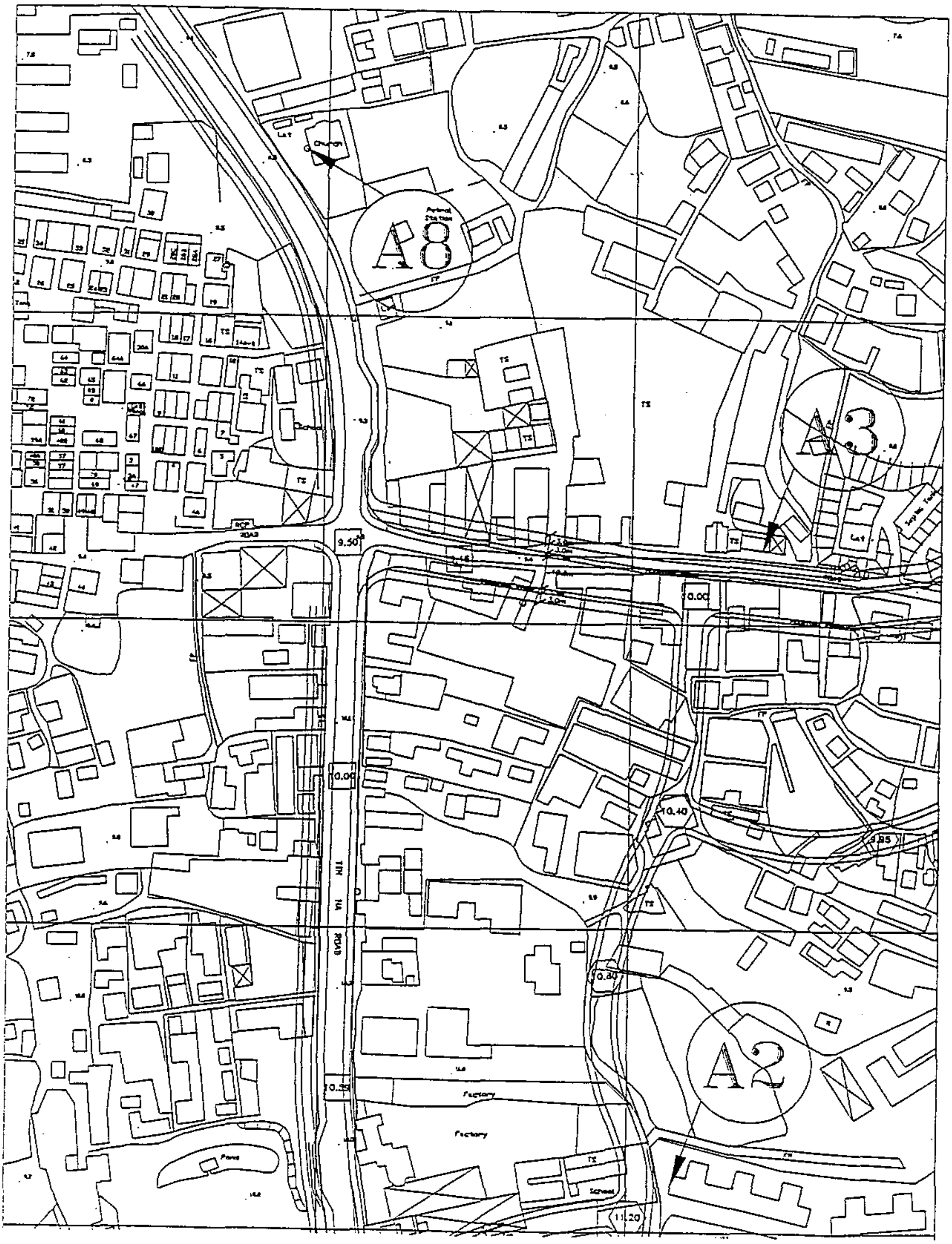

TITLE :	Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment		
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
Figure :	4-3c	Scale :	—

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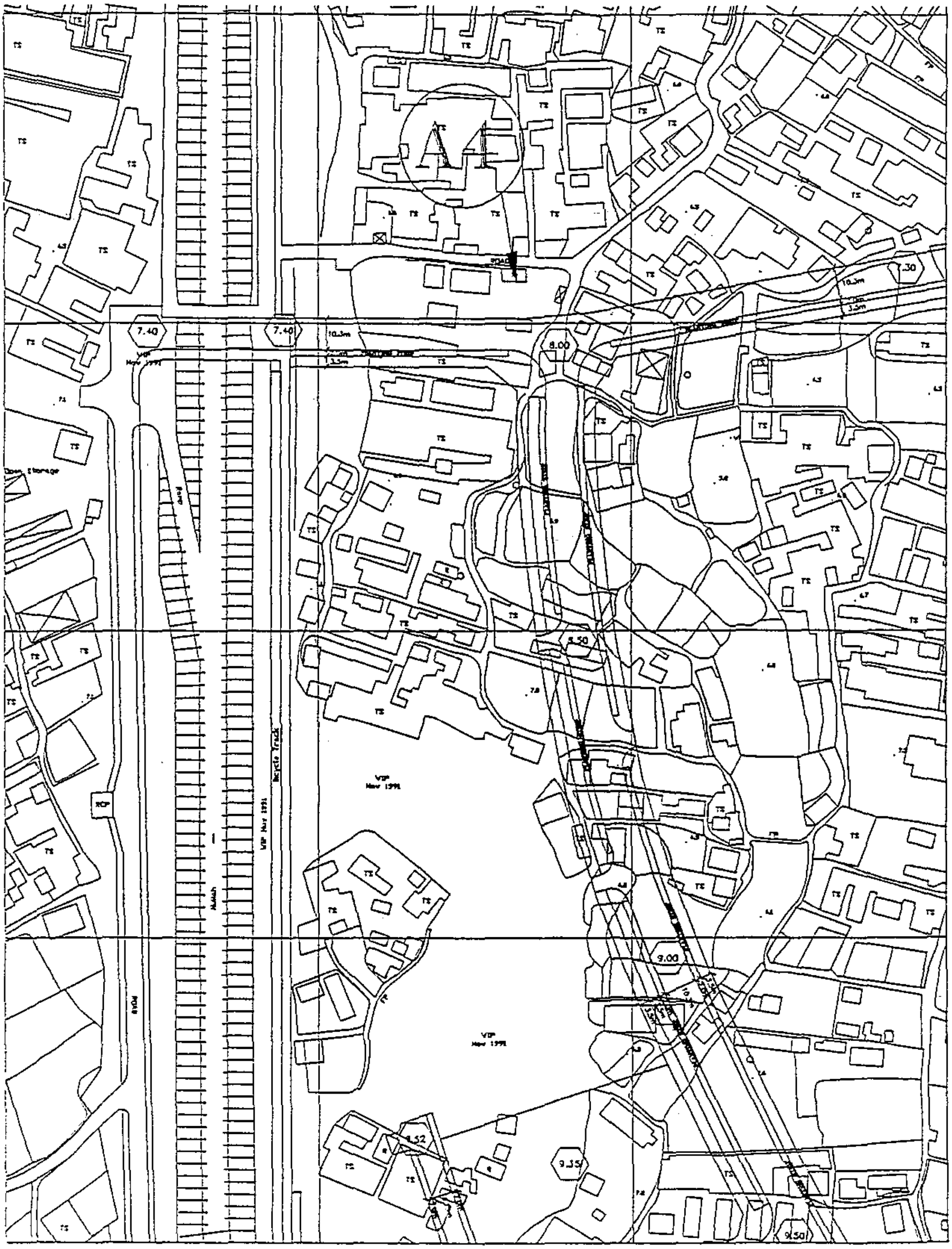
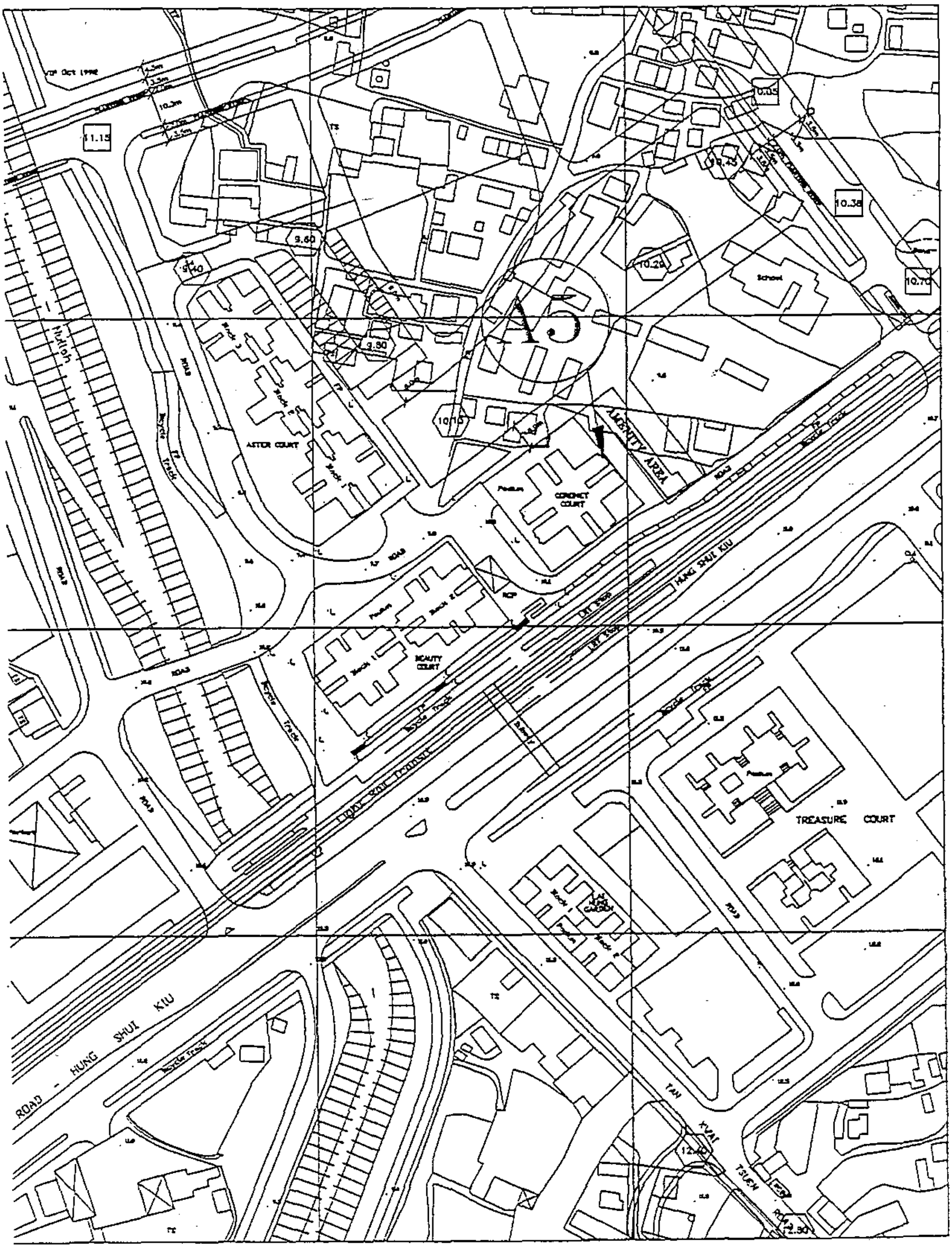


TITLE	:	Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment	
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu	
Figure	:	4-3d	Scale : —

EHS Consultants Limited



TITLE : Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 4-3e

Scale : —

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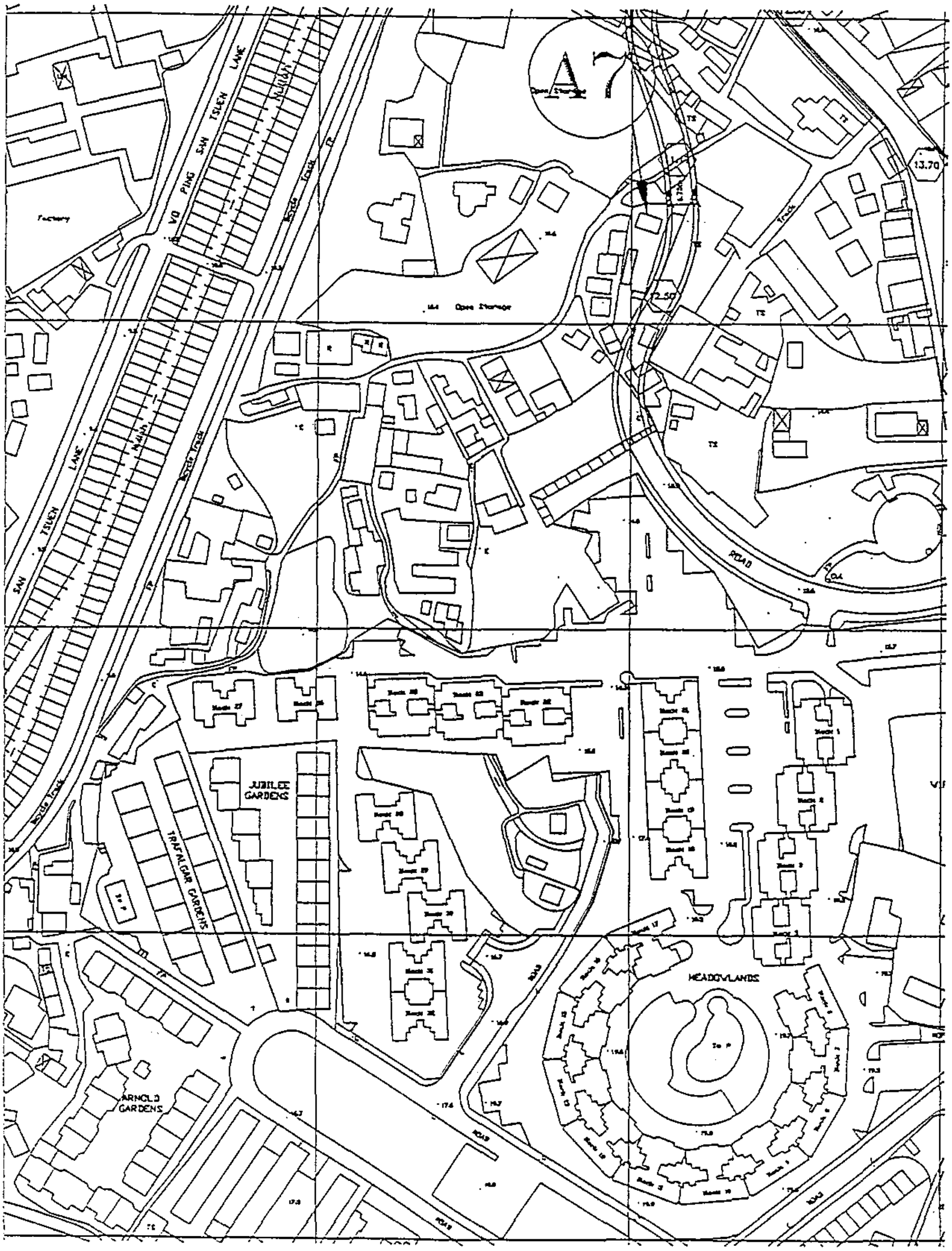

TITLE	:	Locations of the Air Sensitive Receivers for the Construction Dust Emission Impact Assessment
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu
Figure	:	4-3f
Scale	:	—

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4.4.4 Mitigation Measures

The dust concentrations at the selected ASRs were calculated by assuming the worst case situation with all dusty construction activities occurred concurrently. In reality, the activities are of limited duration and could vary in time. Besides, as mention in section 2.2, a conservative approach has been adopted in the assessment by assuming the concurrent commencement of the two separate projects to be undertaken by the Highways Department and Territory Development Department, respectively. Thus, it is expected that the actual dust level at the ASRs would be lower than the modelled values.

Nevertheless, the modelled results indicates that the construction work would likely to cause an unacceptable dust impact at some of the existing ASRs that are located along the proposed road alignments. In order to mitigate the dust impact, the following dust control measures should be incorporated into the Contract Specifications as part of good construction practice and implemented to minimise dust nuisance to within the acceptable levels.

- frequent watering for particularly dusty construction areas;
- side enclosure and covering where practicable of any aggregate or other dusty material storage piles to reduce emissions;
- all dusty vehicle loads transported to, from and between site locations should be covered by tarpaulin sheets;
- establishment and use of vehicle wheel and body washing stations at exit points of site and public roads, combined with cleaning of public roads where necessary and practical;
- where practicable, routing of vehicles and positioning of dust generating construction plant at maximum possible separation distances from ASRs;
- use of regular watering, with complete coverage, in dry periods to reduce dust emissions from unpaved roads;
- imposition speed limits of 5km/hr for vehicles on access roads; and
- instigation of a programme to monitor the construction process in order to enforce controls and modify methods of work if dusty conditions arise.

With a proper control system, dust emission of material handling and drilling would be reduced by 70%, as stated in US EPA AP-42. Considering a dust control efficiency of 60% for the effective dust control measures recommended above, the mitigated dust levels at the selected ASRs have been calculated and shown in Table 4-5 below. The results indicated that with the implementation of these proposed dust control measures, the dust criteria presented under Section 4.4.3 can be satisfied.

Table 4-5 Mitigated TSP levels at the selected ASRs

ASRs	Predicted TSP Concentration (μg/m³) at various height levels from ground					
	Highest Hourly			Highest Daily		
	1.5m	3.0m	5.0m	1.5m	3.0m	5.0m
A1	263	150	102	154	122	101
A2	482	141	93	212	121	99
A3	308	151	98	176	123	100
A4	264	144	101	149	120	101
A5	180	123	105	117	111	105
A6	445	146	95	203	121	99
A7	416	141	96	192	121	100
A8	402	150	98	190	126	101

Note : (i) The background TSP of 98μg/m³ is included in the results.
(ii) Mitigated TSP level = unmitigated dust level arising from construction activities × 0.4 + background TSP level.

4.4.5 Conclusions

Air dispersion model indicated without any effective dust control measures, it is likely that construction dust will pose an unacceptable impact upon the nearby ASRs. Dust mitigation measures, primarily the wetting and covering of exposed dust sources, have been recommended for inclusion in Contract Documents which should be implemented to minimize the dust impacts on the sensitive receivers. In addition, an ambient dust monitoring programme will be set up to oversee the effectiveness of the dust control measures, which is described in the Environmental Monitoring and Audit Report (R718/0696).

4.5 Operational Phase Impact

4.5.1 Introduction

This section deals with the potential air quality impact of vehicular emissions on potentially affected sensitive receivers in the area, arising from the operational phase of the proposed road scheme. The principal pollutants of concern include carbon monoxide (CO), nitrogen oxides (NO_X) and Respirable Suspended Particulate (RSP). The impact of vehicular emissions have been modelled using the program "CALINE4" developed by Trinity Consultants, Inc. and is recognized by HKEPD and USEPA for that purpose.

4.5.2 Assessment Criteria

Assessment Criteria have been based on the Hong Kong Air Quality Objectives (AQO) for air pollutants given in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for air pollution control. The standards used in the present assessment are tabulated below:

Table 4-6 Hong Kong Air Quality Objectives

Pollutant	**Pollutants concentration in $\mu g/m^3$**			
	Averaging Time			
	1 hour (i)	**8 hours (ii)**	**24 hours (ii)**	**1 year (iii)**
CO	30,000	10,000	N.A.	N.A.
NO_2	300	N.A.	150	80
RSP	N.A.	N.A.	180	55

(i) Not to be exceeded more than 3 times per year
(ii) Not to be exceeded more than once per year
(iii) Arithmetic means
N.B. Concentrations are to be measured at 298 K and 101.325 kPa (one atmospheric pressure)

4.5.3 Vehicular Emission Dispersion Model

The pollutant concentrations at selected Air Sensitive Receivers (ASRs) generated from traffic emissions were evaluated by the computer dispersion model "Caline4" approved by EPD. Typical Caline4.LST files containing all the control parameters, input data and the calculated pollutants concentrations are enclosed in Appendix 5 for reference. The highest 1-hour pollutant's concentration at the day time (stability class D) and the night time (stability class F) are obtained directly from Caline4. The highest 24-hour RSP level would be obtained from the following equation:-

24-hour highest concentration = 2/3 highest 1-hour day-time concentration + 1/3 highest 1-hour night-time concentration

4.5.4 Traffic Data

Air pollutant levels experienced by Air Sensitive Receivers (ASRs) due to traffic emissions are related to factors such as engine operational mode, vehicle type and age, road characteristics, and the distance to allow dispersion of the emitted pollutants. The total emission thus depends on the vehicle speed, predicted flow rate and traffic mix. Predicted morning peak traffic flows are used in the modelling for both hourly NO_X and CO while morning as well as afternoon traffic volume are used in the modelling for daily RSP. Vehicle fleet average emission factor of the pollutants were provided by Vehicular Emission Control Section of EPD and are listed in Table 4-7. Vehicle speed modification factor was not applied in the calculation.

Morning and afternoon peak forecast traffic flows for the year 2011 at the proposed road networks has been predicted by the Project Traffic Consultant, MVA ASIA Limited and used in the assessment. These predicted traffic data are summarized in Appendix 4.

Table 4-7 Emission Factors of the Vehicular Pollutants Concentration

Vehicle Type	**Emission Factor (g/km)-EURO2 MODEL**		
	NO_x	**CO**	**RSP**
Passenger car (Petrol)	1.321	13.508	0.041
Light Goods Diesel Vehicle	1.540	0.990	0.266
Heavy Goods Diesel Vehicle	7.061	8.410	0.568

The following assumptions were adopted throughout the study :

i. NO_x is a mixture of NO and NO_2;

ii. 20% of NO_x is assumed to be NO_2;

iii. NO_2 was modeled as "Inert Gas"; with a molecular weight of 46g;

iv. The proportion of RSP in the vehicular emission is assumed to be 100% of the particulate matter which is, in general, less than 10 μm in the aerodynamic diameter.

4.5.5 Meteorological Data and Condition

Pasquill stability class D with wind speed of 1m/s and stability class F with wind speed of 1 m/s were used for the modelling of daytime and night-time results respectively. The average mixing height, according to data from the Lau Fau Shan Weather Station monitoring, was 500m. Wind direction standard deviation of 12° and 5° was applied to stability class D and F respectively. The parameter of worst case wind direction was predicted automatically by the model.

4.5.6 Background Air Pollutant Levels

With reference to EPD's monitored ambient dust levels, the Respirable Suspended Particulate (RSP) level is ranging approximately from about one third to almost half that of the TSP concentration. Considering a background TSP level of 98μg/m^3 (see section 4.4.3), the background RSP concentration for the study has been taken to be 49μg/m^3.

Besides, the background CO and NO_2 levels have been taken to be 681μg/m^3 and 35μg/m^3 for the study area based on the monitored air pollutant levels given in section 4.2.3.

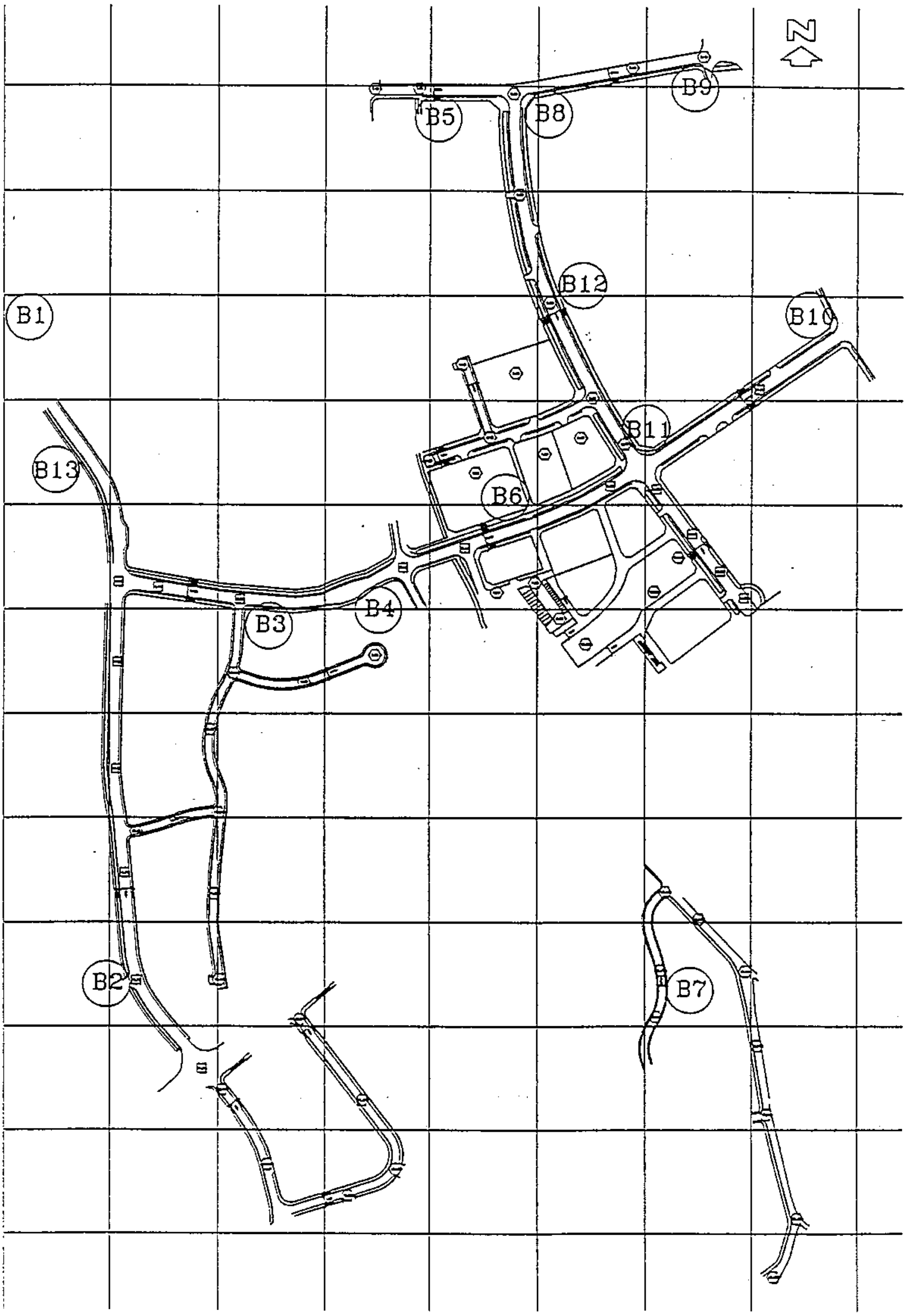
4.5.7 Air Sensitive Receivers

The proposed future land uses in the proximity of the road scheme have been discussed in Section 3. Most of the proposed Commercial/ Residential developments have not yet been planned and hence site layout plans are not available. However, as shown in Figures 2-1 and 5-2, existing and future sensitive receivers will be separated from the proposed road alignments by "designed buffer areas", which will form the footpaths, cycle tracks and roadside planting areas. The buffer distances provided along the kerbsides of road alignments range from 1.6m for L14, 2m for L12, etc. to a maximum of 10m for a section of road D2. The designed buffer distances provided along the road sections adjacent to the selected Air Sensitive Receivers (ASRs) are shown below in Table 4-8 below.

Potential air quality impact resulted from vehicular emission has been assessed by predicting the air pollutant concentrations at different distances away from each road section for each of the selected ASRs B1 to B14. The locations of these ASRs are shown in Figure 4-4.

The modelled results would indicate whether the designed buffer distances along the various road sections will be adequate to ameliorate the potential air quality impact resulted from on-road traffic. The trend of pollutant concentration changes against distance from roads can also be observed. Further setback of existing and future sensitive land uses would be recommended should the assessment results indicate exceedance of the relevant Air Quality Objective criteria.

All selected ASRs have been taken to be situated at 1.5m above ground except for ASRs B5, B6, B8 and B9 near which roadside noise barriers have been proposed (see Figure 5-2 for location of proposed noise barriers). In view of the noise barrier construction, the potential secondary air quality impact on the concerned ASRs was assessed. Similar input parameters and assumption were used as in the open road options. In addition to that, it has been assumed that with the installation of noise barriers, all the traffic pollutants at the barrier sections would be emitted from the top of the noise barriers. The elevation of the road section with proposed roadside noise barrier were therefore set at the elevation of the barrier top. The assessment heights for the ASRs B5, B6, B8 and B9 were also taken to be at the same level so as to give the worst case scenario (i.e. 5m above ground for B5, B8 and B9; 3m above ground for B6). The option "Fill" is set in the Caline4 modelling for the vertical barriers.



TITLE	:	Location of the Air Sensitive Receivers for the Vehicular Emission Impact Assessment	
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu	
Figure	: 4-4	Scale	: —

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4.5.8 Results

The predicted highest 1-hour CO and NO_2 levels, together with the predicted daily average RSP level at the selected locations are listed in Table 4-8 below. Typical Caline4 result files are enclosed in Appendix 5 for reference.

Table 4-8 Predicted Highest Pollutant Concentration ($\mu g/m^3$) at the selected ASRs[a]

ASR	Assessment point - distance from nearest road kerb	Assessment height[b]	Road section concerned	Designed buffer distance[c]	CO (1 hr)	NO_2 (1 hr)	RSP (24 hr)
B1	2m	1.5m above ground	D1	2m	4688	261	169
	5m				3886	223	147
	10m				2398	148	99
B2	2m	1.5m above ground	D1	5.5m	3199	185	127
	5m				2971	148	122
	10m				2627	148	113
B3	2m	1.5m above ground	L1 & L12	4.5m (for L1) & 2m (for L12)	1482	73	67
	5m				1368	73	64
	10m				1253	73	63
B4	2m	1.5m above ground	L1	4.5m	1139	73	58
	5m				1139	73	57
	10m				1024	73	58
B5	2m	5.0m above ground	D2	5.5m	3428	185	87
	5m				2627	148	82
	10m				1711	110	74
B6	2m	3.0m above ground	L1	10m	2398	110	72
	5m				1711	73	65
	10m				1253	73	59
B7	2m	1.5m above ground	L14	1.6m	910	73	53
	5m				796	73	53
	10m				796	73	53
B8	5.5m	5.0m above ground	D2, L2	5.5m	2169	110	76
	10m				1711	73	71
B9	5.5m	5.0m above ground	D2	5.5m	4802	260	98
	10m				3199	148	88
B10	5.5m	1.5m above ground	L1	5.5m	1368	73	62
	10m				1253	73	60
B11	5.5m	1.5m above ground	L1, L2	5.5m (for both L1 & L2)	1482	73	65
	10m				1368	73	62
B12	5.5m	1.5m above ground	L2	5.5m	1253	73	59
	10m				1139	73	58
B13	2m	1.5m above ground	D1	5.5m	3428	185	130
	5m				2398	148	100
	10m				1940	110	85
				Air Quality Objectives	30,000	300	180

[a] Background air pollutant levels included in the results (i.e. 681$\mu g/m^3$ for hourly CO, 35$\mu g/m^3$ for hourly NO_2 and 48$\mu g/m^3$ for daily RSP)

[b] Assessment height has been taken to be 1.5m above ground except for B5, B6, B8, B9 near which roadside noise barriers have been proposed (see Section 4.5.7).

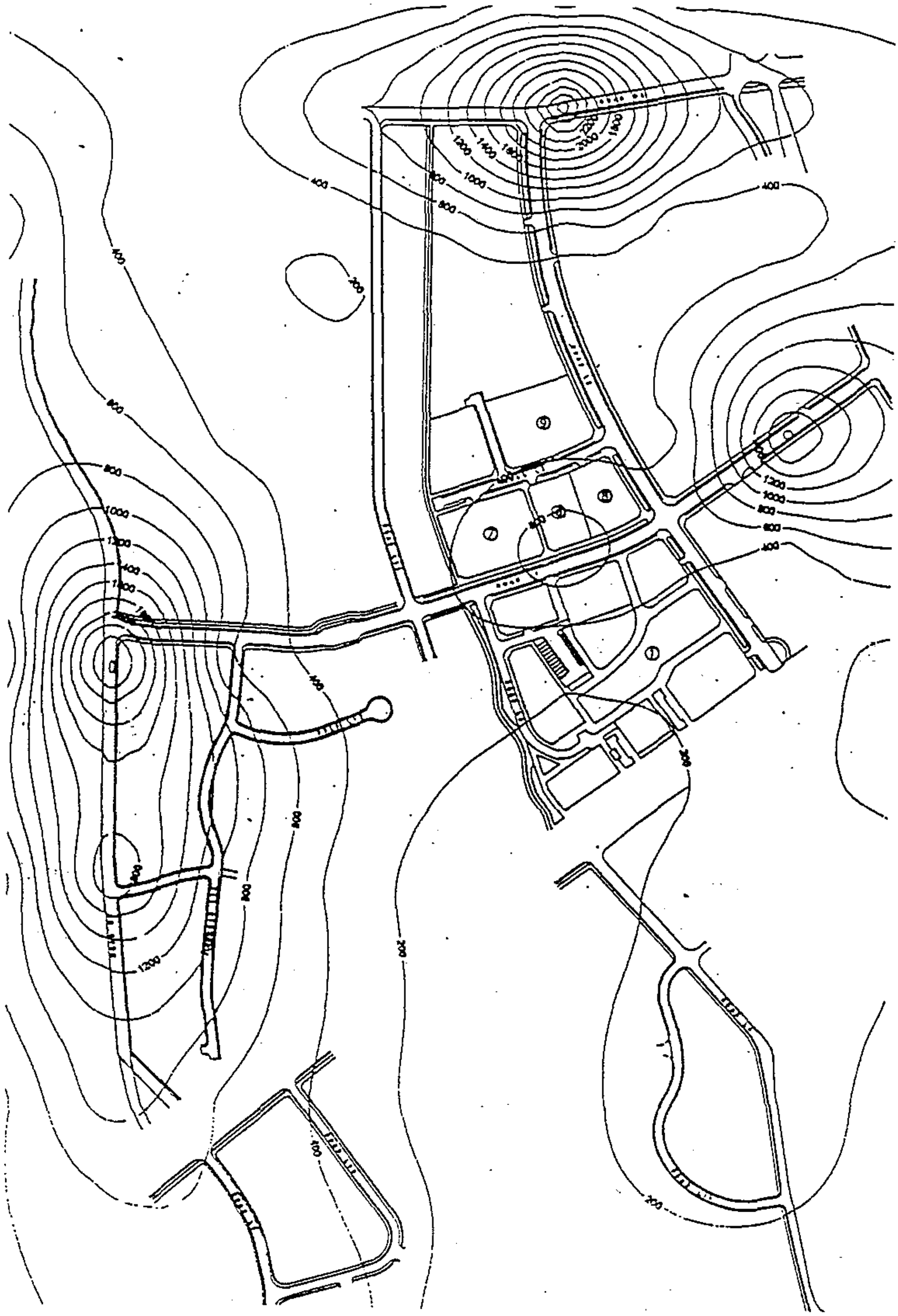
[c] The buffer distances given in this column indicate the width of roadside areas reserved for footpaths, cycle tracks and planting area along road sections adjacent to the selected ASRs.

The modelled air pollutant concentrations are all well within the relevant AQO standards. Therefore, with the designed buffer distances, which will be used as footpaths, cycle tracks and roadside planting areas, air pollutants emitted from future road traffic will not create any unacceptable air quality impact upon the existing and any future sensitive receivers along the proposed roads.

The predicted highest hourly concentrations of CO, NO_2 and daily average concentrations of RSP in the vicinity of the proposed roads are also presented in form of contour maps as shown in Figures 4-5 to 4-7 below.

4.5.9 Conclusions

Air quality impact due to vehicular emissions from the proposed road scheme has been quantitatively assessed. Modelled results indicate that with the designed buffer distances along the proposed road alignments, the AQO criteria as stated in the HKPSG will be satisfied at the existing and future Air Sensitive Receivers in the vicinity. The buffer areas are preserved for footpaths, cycle tracks and roadside planting areas.



TITLE : Predicted highest hourly CO concentrations (μg/m3) in the vicinity of the proposed road alignments at 1.5m above ground

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 4-5 Scale : —

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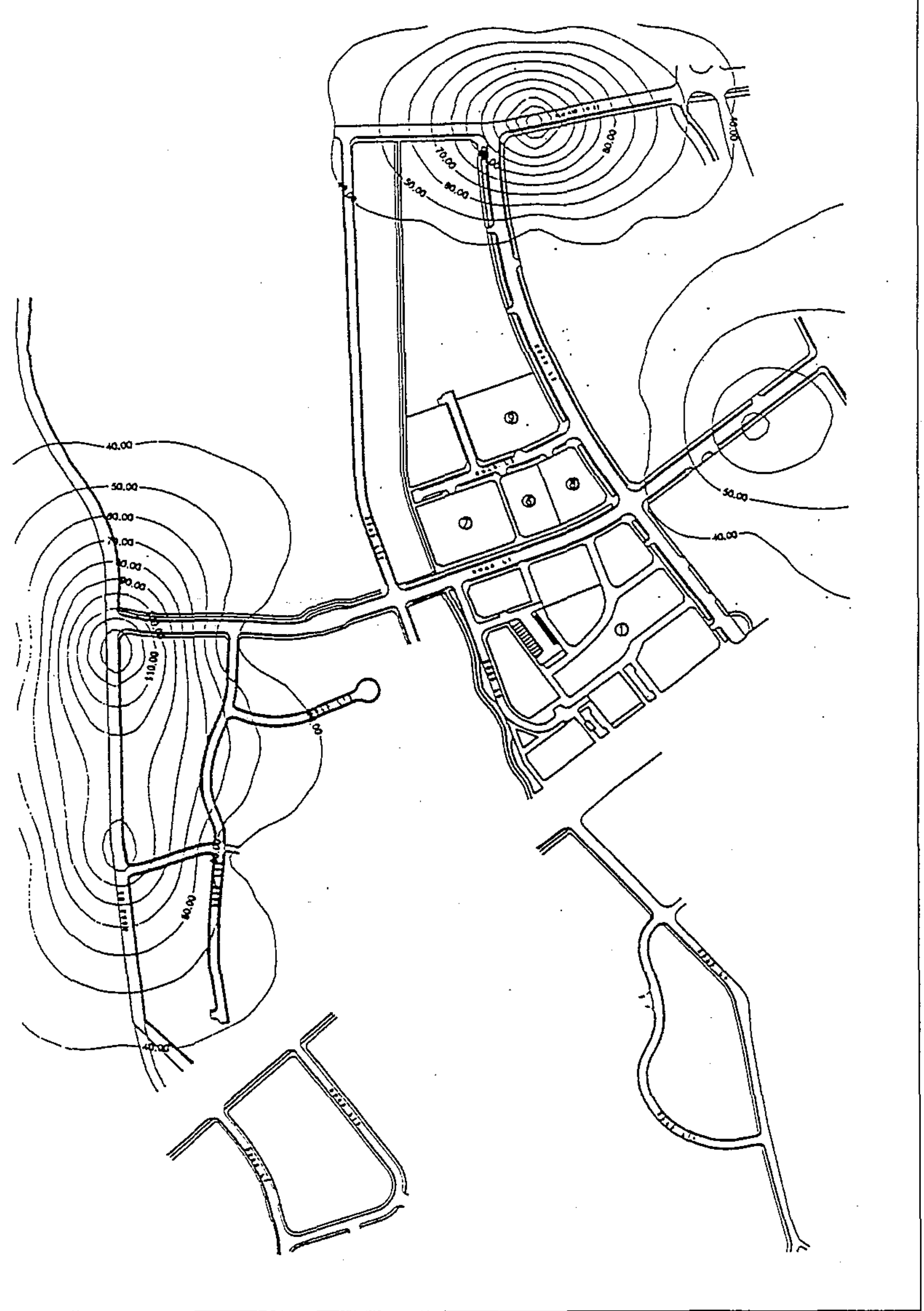

TITLE :	Predicted highest hourly NO_2 concentrations (μg/m3) in the vicinity of the proposed road alignments at 1.5m above ground		
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
Figure :	4-6	Scale :	—

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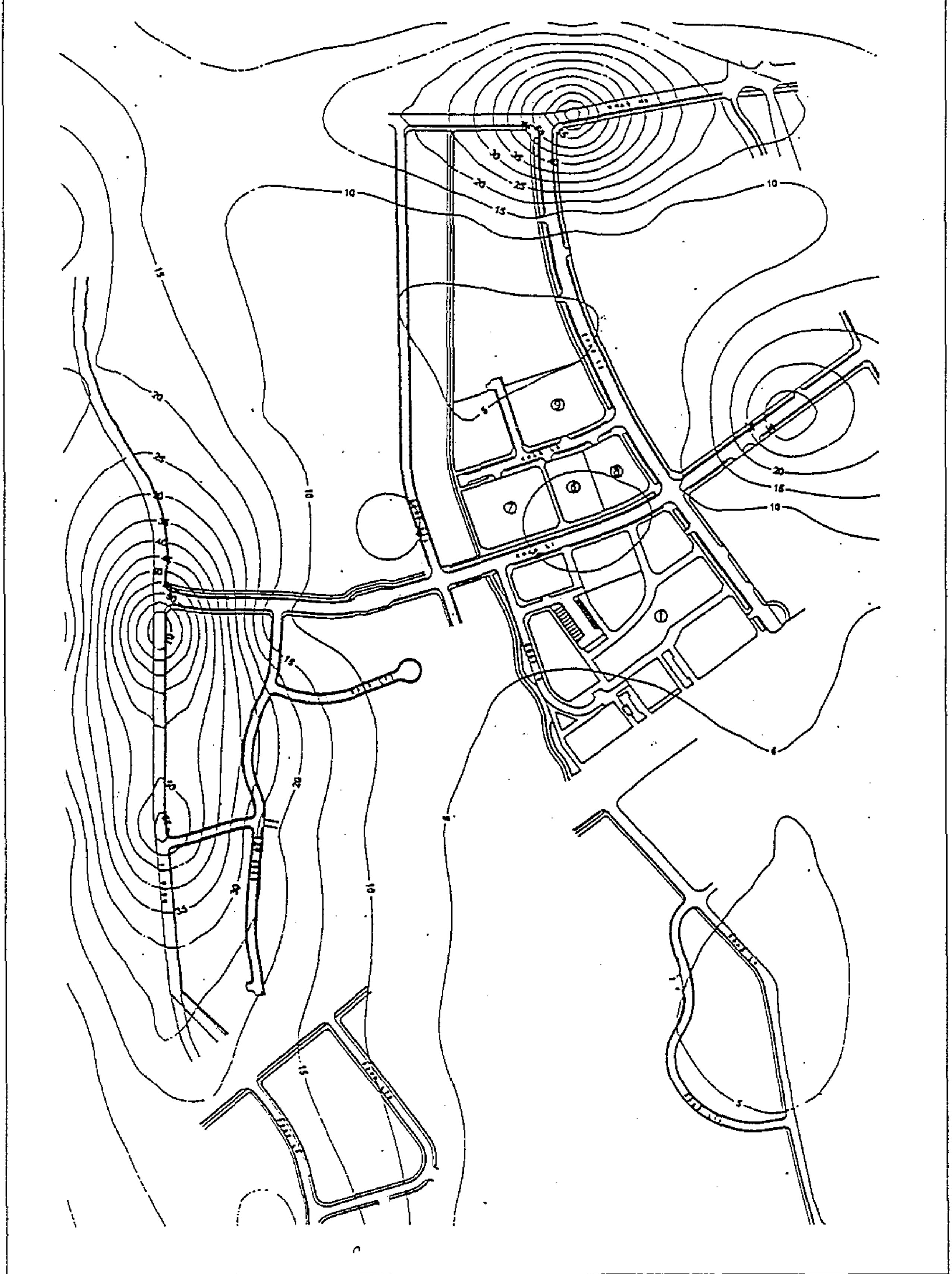

TITLE :	Predicted daily average RSP concentrations (μg/m3) in the vicinity of the proposed road alignments at 1.5m above ground
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu
Figure :	4-7 Scale : —

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5. NOISE IMPACT ASSESSMENT

5.1 Introduction

This section describes the noise impact during the construction phase of the proposed projects as well as traffic noise impact from the operation of the proposed road scheme. The boundary of the "Study Area" for the purpose of this Noise Impact Assessment is defined by a distance of 300m from the proposed road alignments. Noise Sensitive Receivers (NSRs) are those as identified under section 3.4.

5.2 Construction Phase Impact

5.2.1 Introduction

The construction noise impact has been predicted in the following section. It has been made possible by considering a reasonably assumed construction schedule as shown in section 2.2 and is reproduced below for easy reference. The assumed schedule is subjected to change when it is to be carried out in the future. Nevertheless, the assessment can enable a test on the surmountability and hence the possible mitigation measures, if necessary, can be recommended and specified in the future contractual clauses.

Table 5-1 Construction Activities and Schedules for the Proposed Projects

Stage	Description
1	Site clearance, excavation and earthworks for alignment and site formation;
2	Percussive piling at foundation locations for nullah crossing plus its formation;
3	Installation of drainage, utilities and manhole plus construction of retaining walls;
4	Formation of road sub-base; and
5	Road surfacing and finishing works

5.2.2 Assessment Criteria

In Hong Kong, construction noise is controlled under the Noise Control Ordinance (NCO) through a Construction Noise Permit (CNP) system, and the three subsidiary Technical Memoranda, namely:

- Technical Memorandum (TM) on Noise from Construction Work Other Than Percussive Piling, TM(1), which details the assessment procedures on noise from construction work other than percussive piling involving the use of Powered Mechanical Equipment (PME) within "restricted hours", that is between 19:00 to 07:00 hours the next day for Mondays to Saturdays and any time for Sundays and public holidays, for the issuing of CNP.
- Technical Memorandum on Noise from Percussive Piling, TM(2), which details the procedures that generally adopted by the Authority for determining the permitted hours of operation for the issuing of CNP for percussive piling.
- Technical Memorandum on Noise from Construction Work in Designated Areas, TM(3), which governs the noise generated from the use of Specified Powered Mechanical Equipment (SPME) other than Percussive Piling and/or the carrying out of Prescribed Construction Work (PCW) within designated areas.

For construction works other than percussive piling, although the TM1 do not provide control over construction noise generated during normal working hours, a limit of L_{eq}(30min) 75dB(A) is proposed in the "Practice Note for Professional Persons Environmental Consultative Committee (ProPECC) in June 1993. This limit has been applied on major construction projects, and is now generally accepted in Hong Kong. For schools, the recommended noise levels during normal schools days is L_{eq}(30min) 70dB(A) and is lowered to L_{eq}(30min) 65 dB(A) during students examination periods.

For construction noise from percussive piling, a Construction Noise Permit (CNP) has to be applied from the EPD which will specify as a condition the permitted hours of operation and any other conditions that the Authority considers appropriate.

5.2.3 Construction Equipment Inventory

As the actual types and number of units of Powered Mechanical Equipment (PME) to be used during the five-stage construction phase are not certain at this stage, typical PME have been assumed with their corresponding sound power levels determined from Table 3 of the TM1. They are divided into groups that are unlikely to be used concurrently within their individual working stages as shown in Table 5-2.

Percussive piling is involved in stage 2 of the construction programme. The locations of the two nullah crossings (PL1 and PL2) at which percussive piling will be required for the two separate projects to be undertaken by the Highways Department and Territory Development Department respectively is shown in Figure 2-2. The most likely Piling Method and Pile Type that will be involved is known to be *Drop Hammer Driving Steel Pile* which has a Sound Power Level of 126dB(A) as specified in Table 2 of TM2. As the two pile locations are of great distance from each other and it is unlikely that percussive piling will take place concurrently at PL1 and PL2 (recalling that piling works at PL1 and PL2 are under two separate projects, with one project started earlier than the other), the assessment of noise from percussive piling has been conducted independently for piling works at each of the two nullah crossings.

5.2.4 The Approach and Methodology

Noise from Construction Work Other Than Percussive Piling

As the construction activities given in Table 5-1 will unlikely be carried out during the restricted hours, the limit of L_{eq}(30min) 75 dB(A) has been taken as the Acceptable Noise Level (ANL) for construction noise assessment for this study.

Construction noise other than percussive piling at noise sensitive receivers (NSRs) was determined and assessed in accordance with the procedures laid down in the TM1. However, before the appointment of a construction contractor, full details of the type and utilisation of construction plant will not be known. All calculations on construction noise other than percussive piling were therefore based on a set of assumptions summarised below :

(a) Based on the tentative construction programme as shown in Table 5-1, a noise emission inventory of PME to be used and number of units for each of the construction activities are identified as shown in Table 5-2 below;

(b) Each item of PME is assigned a Sound Power Level (SWL) based on the values given in the TM1;

(c) Predicted Noise Level (PNL) for each of the five stages of construction activities are calculated by assuming :

  (i) 100%, 50% or 25% on time of PME (within a typical 30 minutes period), which shall depend on the type of PME concerned and their normal usage frequency in roadworks;

  (ii) the concurrent operation of the concerned noisy plant only for a particular activity;

(iii) the PNLs obtained from various construction activities (grouped under different item nos. in Table 5-2) within the same construction stage are compared and the "maximum PNL" is taken to be the PNL for that construction stage.

(d) Noise levels at each NSR resulted from each of the 5-stage construction activities are then corrected for distance attenuation and the effect of reflection to give a Corrected Noise Level (CNL) at the NSR.

On the other hand, due to the complexity of the proposed projects, it was considered appropriate to assess the construction phase noise impact by sub-dividing the construction area into linear road sections with each constitute one works area. Since each works area is linear in shape with a length to width ratio exceeding 5:1, according to Step 7 of the TM1, only the "dominant portion" of the zones that are closest to the identified NSRs and is having a length to width ratio of 5:1 would be selected for the construction noise impact assessment. As a result of this criteria, the assessment has been based on a conservative approach with the PME considered to be grouped at the nearest notional source position of each works area to the NSRs. This conservative approach will give the worst-case scenario of impact from construction activities.

Construction Noise from Percussive Piling

The assessment of noise from percussive piling has been conducted based on the TM2. In general, the methodology used is as follows :-

(a) Locate the nearest NSRs that may be affected by percussive piling at each of the two nullah crossings (PL1 and PL2) and determine the appropriate Acceptable Noise Level (ANL);

(b) Calculate distance attenuation to the NSRs from the pile location (taken to be on the piling zone boundary nearest to the NSR) and hence the Predicted Noise Level (PNL);

(c) Correct the effect due to acoustic reflections to give the Corrected Noise Level (CNL); and

(d) Determine the appropriate Permitted Hours of Operation for the Percussive Piling by comparing the CNL with the ANL.

Table 5-2 Typical PME to be used in Various Construction Stages

Stage 1: Site Clearance Work, excavation for road alignment					
Item	I.D. Code	PME used	Nos. used	SWL, dB(A)	Assumed % on time
1.1	CNP 030	Bulldozer	1	115	50
1.2[a]	CNP 023	Breaker, hand-held (pneumatic)	1	117	50
1.3	CNP 141	Lorry	1	112	25
	CNP 081	Excavator	1	112	25
Stage 2: Percussive piling for nullah crossing and its formation[b]					
Stage 3: Installation of Underground Drains, Services Utilities & Manhole					
Item	I.D. Code	PME used	Nos. used	SWL, dB(A)	Assumed % on time
3.1	CNP 141	Lorry	1	112	25
	CNP 170	Mobile crane	1	112	25
3.2	CNP 141	Concrete mixer	1	109	50
	CNP 048	Poker	1	113	50
	CNP 102	Generator	1	100	100
Stage 4: Formation of Road Subbase					
Item	I.D. Code	PME used	Nos. used	SWL, dB(A)	Assumed % on time
4.1	CNP 030	Bulldozer	1	115	50
	CNP 141	Lorry	1	112	25
4.2	CNP 185	Road roller	1	108	50
Stage 5: Road Surfacing and finishing works					
Item	I.D. Code	PME used	Nos. used	SWL, dB(A)	Assumed % on time
5.1	CNP 021	Bar bender	1	90	25
	CNP 141	Lorry	1	112	25
5.2	CNP 044	Concrete lorry mixer	1	109	25
	CNP 047	Concrete pump	1	109	25
	CNP 170	Poker	1	113	25
5.3	CNP 004	Asphalt paver	1	109	50
	CNP 185	Road roller	1	108	50

[a] Breaker will only be required at locations involving breaking of concrete (i.e. primarily along Tin Ha Road which will be widened.)

[b] Noise impact from percussive piling in Stage 2 is independently assessed in accordance with the methodology given in Section 5.2.4 Construction noise from Percussive Piling.

5.2.5 Noise Sensitive Receivers

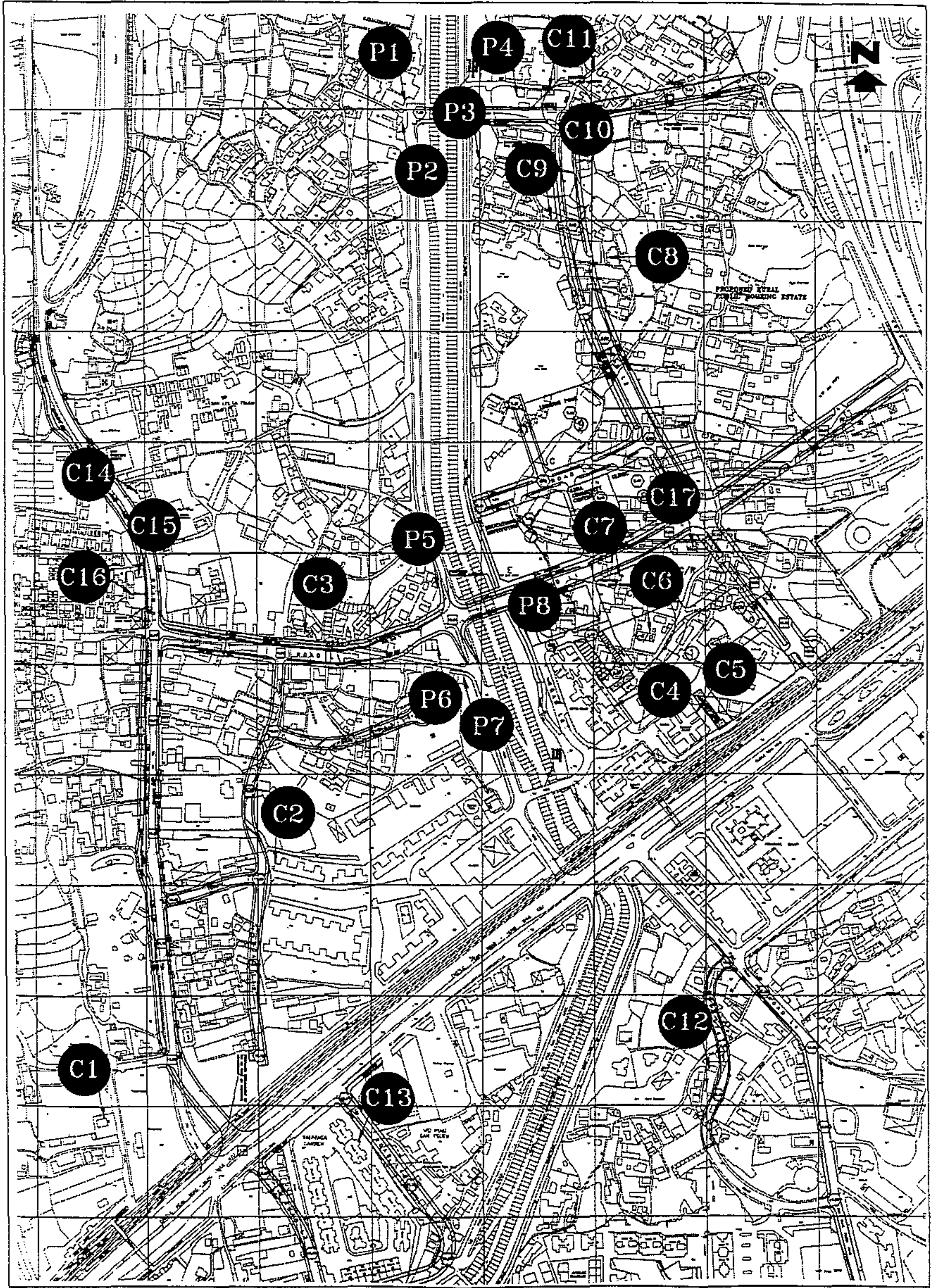
The NSRs that are worst impacted by noise from construction work other than percussive piling and noise from percussive piling are presented below in Table 5-3 and Table 5-4, respectively with their locations shown in Figure 5-1.

Table 5-3 NSRs worst impacted by Construction Noise Other Than Percussive Piling

Label	Noise Sensitive Receiver	Distance (m) from Notional Source
C1	Village House	20
C2	Parkview Garden	6.5
C3	Village House	8.5
C4	Aster Court	59
C5	Coronet Court	34.5
C6	Village House	24.5
C7	Village House	20
C8	Village House	18
C9	Village House	12
C10	Village House	14
C11	Village House	14
C12	Village House	9
C13	Bauhinia Garden	10.5
C14	Church	11.0
C15	Village House	7.5
C16	Kindergarten	18
C17	Kindergarten	16

Table 5-4 NSRs worst impacted by Noise from Percussive Piling

Label	Noise Sensitive Receiver	Distance (m) from Notional Source
For Percussive Piling at PL1 :		
P1	Village House	24m
P2	Village House	22m
P3	Village House	44m
P4	Village House	53m
For Percussive Piling at PL2 :		
P5	Village House	25m
P6	Village House	39m
P7	Village House	48m
P8	Aster Court (Block 3)	62m



TITLE :	Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment		
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu		
Figure :	5-1a	Scale :	—

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TITLE	:	Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment	
PROJECT	:	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu	
Figure	: 5-1b	Scale	: —

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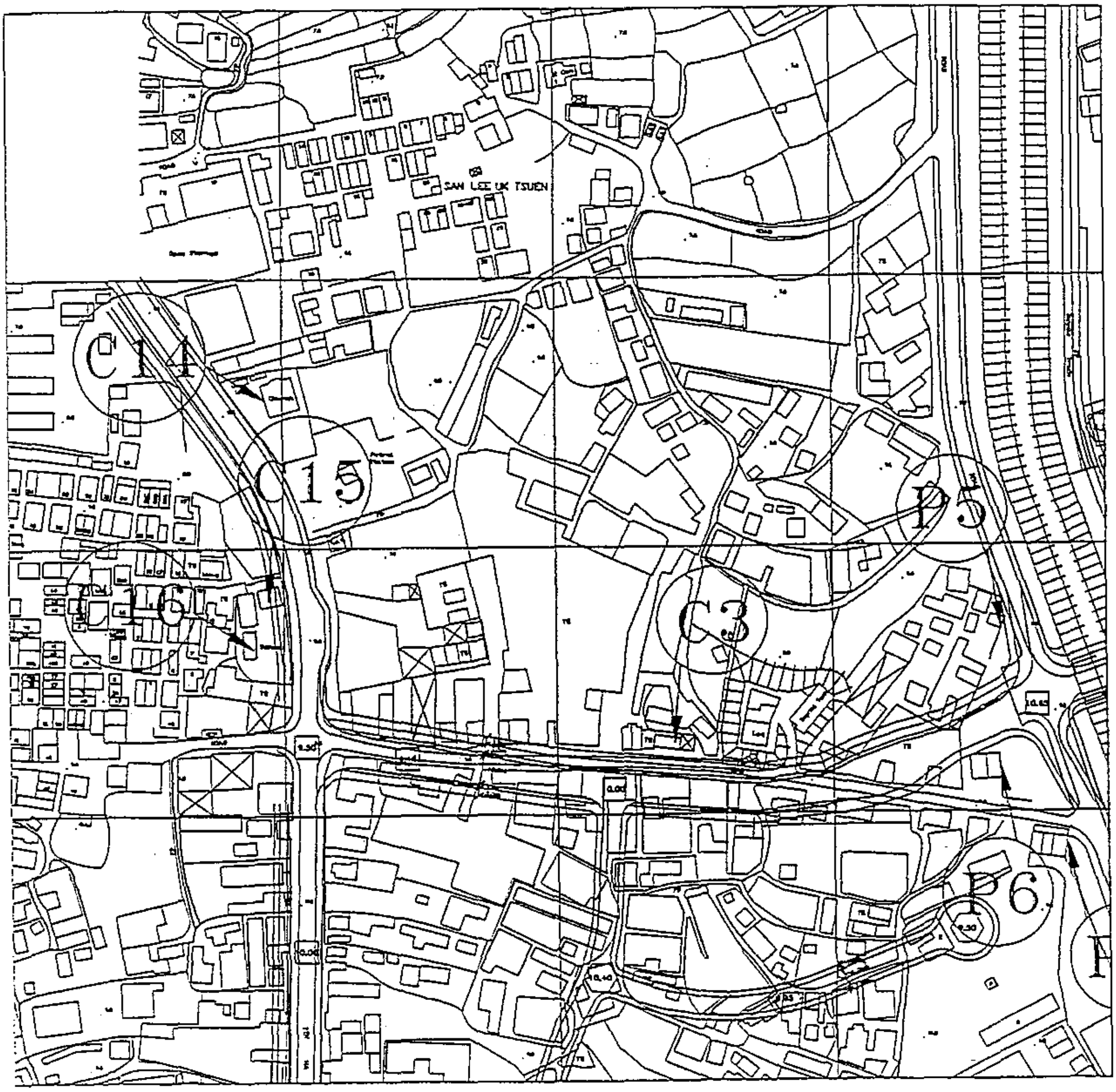
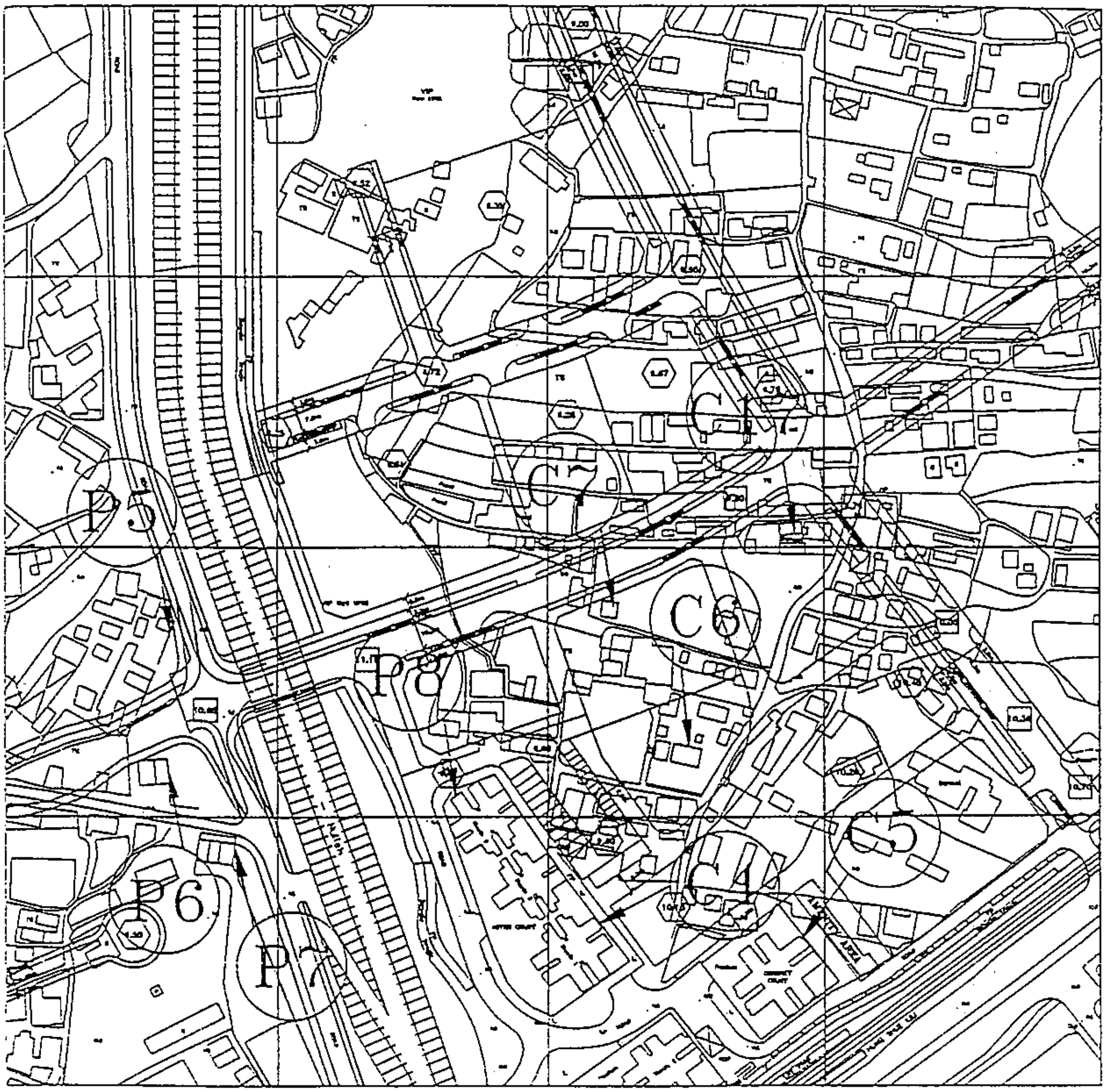
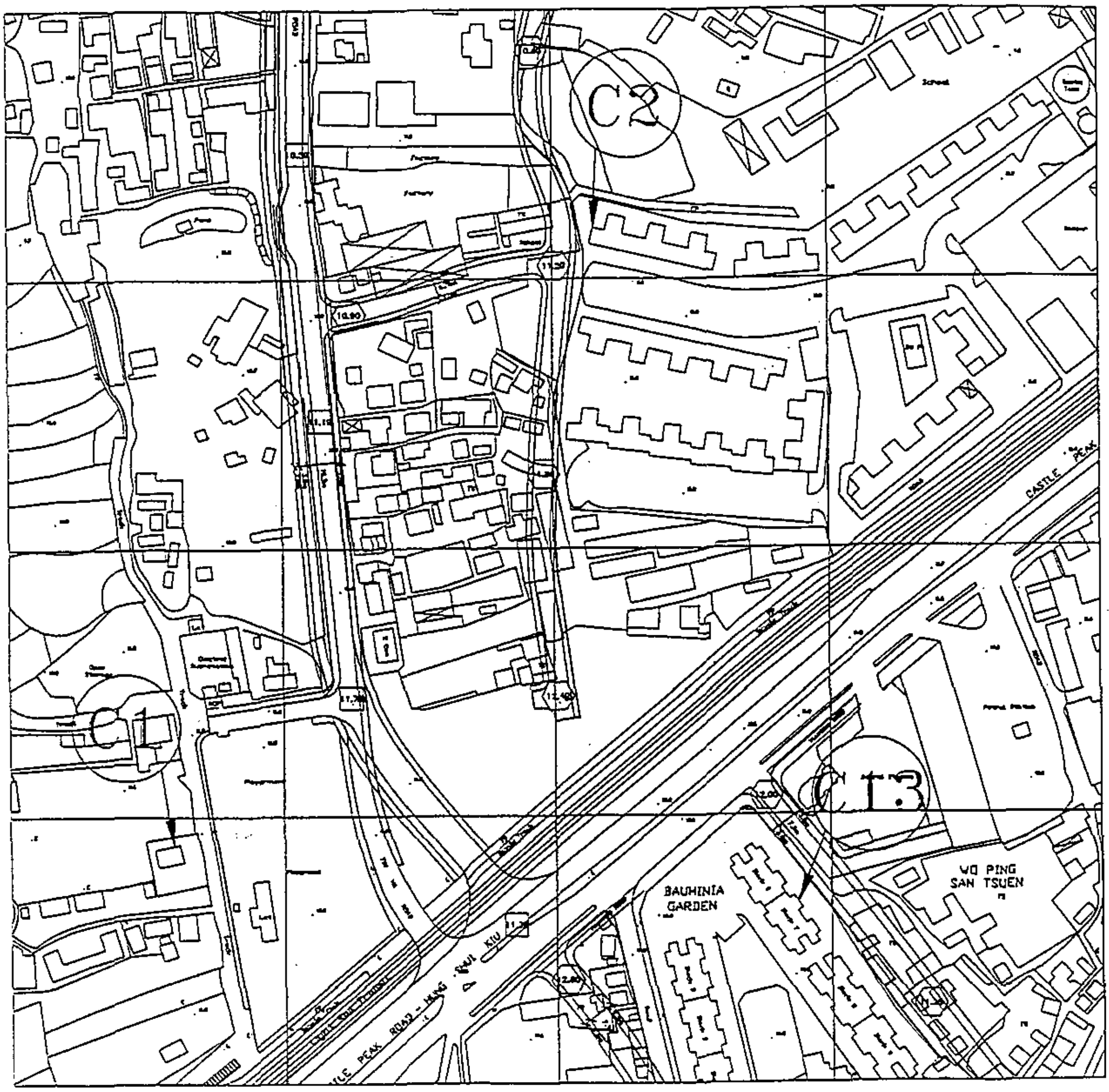


TITLE :	Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment			EHS Consultants Limited
PROJECT :	Territory Development Department (CE 34/93) EIA Study for Hung Shui Kiu			
Figure :	5-1c	Scale :	—	



TITLE	:	Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment	EHS Consultants Limited
PROJECT	:	Territory Development Department (CE 34/93) ELA Study for Hung Shui Kiu	
Figure	:	5-1d	Scale : —



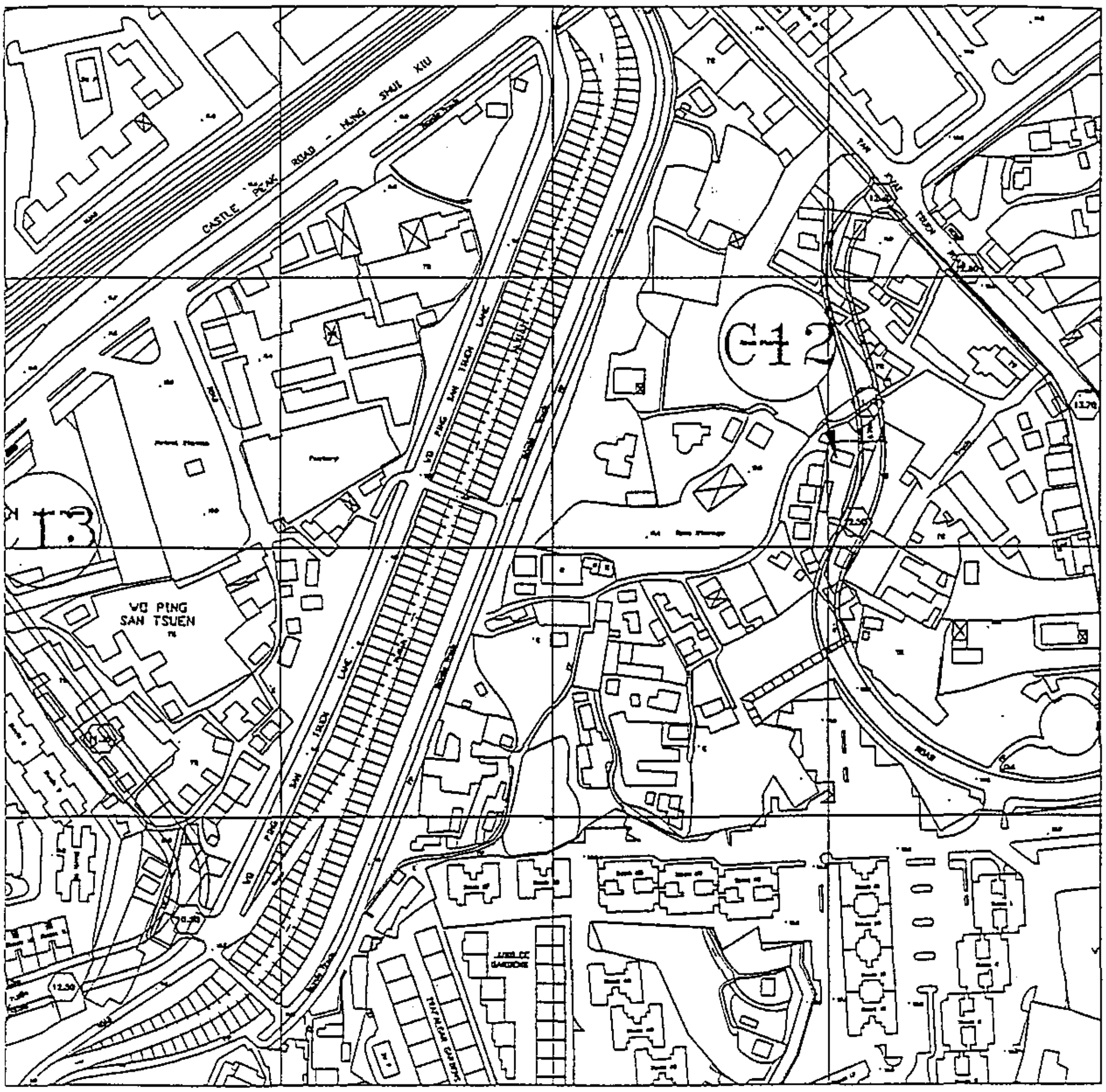
TITLE : Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 5-1e

Scale : —

EHS Consultants Limited



TITLE : Locations of the Worst Affected NSRs for the Construction Noise Impact Assessment

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

Figure : 5-1f

Scale : —

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5.2.6 Assessment Results - Noise from Construction Work other than Percussive Piling

Un-mitigated Noise Impact

The breakdown of calculation for construction noise impact other than percussive piling at a typical NSR has been given in Appendix 6 while the results obtained for all selected NSRs at various construction stages are summarised below in Table 5-5. Noise levels exceeding the day-time noise limits are shown in bold. Noise impact from the use of hand-held pneumatic breaker has been taken into account in the calculation of noise levels at NSRs C1, C14 to C16 located along Tin Ha Road.

*Table 5-5 Predicted Corrected Noise Level (No mitigation) at various stages, dB(A)**

NSRs	Stage 1	Stage 3	Stage 4	Stage 5
C1	**83.0**	**80.7**	**81.9**	**78.5**
C2	**90.7**	**90.5**	**91.7**	**88.3**
C3	**88.4**	**88.1**	**89.4**	**85.9**
C4	71.6	71.3	72.5	69.1
C5	**76.2**	**76.0**	**77.2**	73.8
C6	**79.2**	**79.0**	**80.2**	**76.7**
C7	**81.0**	**80.7**	**81.9**	**78.5**
C8	**81.9**	**81.6**	**82.8**	**79.4**
C9	**85.4**	**85.2**	**86.4**	**82.9**
C10	**84.1**	**83.8**	**85.0**	**81.6**
C11	**84.1**	**83.8**	**85.0**	**81.6**
C12	**87.9**	**87.6**	**88.9**	**85.4**
C13	**86.6**	**86.3**	**87.5**	**84.1**
C14	**88.2**	**85.9**	**87.1**	**83.7**
C15	**91.5**	**89.2**	**90.5**	**87.0**
C16	**81.9**	**81.6**	**82.8**	**79.4**
C17	**82.9**	**82.7**	**83.9**	**80.4**

* Noise impact from percussive piling in Stage 2 is independently assessed in accordance with the methodology given in Section 5.2.4 Construction noise from Percussive Piling.

Possible Noise Mitigation Measures

Table 5-4 indicates that noise impact from construction work other than percussive piling during the daytime period will be significantly above the L_{eq}(30 min) 75dB(A) guideline at most selected NSRs. Noise mitigation measures are required, and the effectiveness of the following forms of mitigation have been considered.

(i) selecting quiet equipment;

(ii) use of temporary mobile noise barriers and enclosures;

(iii) good site practice to limit noise emissions at source

(i) Selecting Quiet Equipment

The Contractor shall diligently source equivalent model of plants that are quieter than the standard types given in TM1. The actual benefits that can be achieved by this will depend on the details of the chosen methods of working by the appointed contractors.

It is considered too restrictive to the construction works to specify plants to be used for the construction operations. Instead, it would be preferable and practical to specify plant noise performance specification to apply to the total sound power level of all plants to be used so that the Contractor is allowed some flexibility to select the plants to suit his needs. Nevertheless, plants with lower noise levels than those given in the TM1 for the same type of equipment should be used whenever possible. Examples of SWL for specific silenced PME, which are known to be available in Hong Kong, are given below : -

Bulldozer	100 dB(A) max;
Concrete Pump	105 dB(A) max;
Dump Truck	110 dB(A) max;
Excavator	105 dB(A) max;
Hand-held Breaker	110 dB(A) max;
Lorry	110 dB(A) max;
Mobile Crane	105 dB(A) max;
Poker	110 dB(A) max;

(ii) Use of Temporary Mobile Noise Barriers and Machinery Enclosures

Mobile noise barriers can be effective in screening noise from reaching sensitive receivers, particularly for the low-rise buildings in this case. 3m high mobile barriers with skid footing and a small cantilevered upper portion can be located within a few meters of stationary plants and within about 5m of more mobile plant such as bulldozers and excavators etc. The barriers should have no openings or gaps and preferably have a superficial surface density of at least 10 kg/m^2. In addition, certain types of PME such as generators can be totally shielded by machine enclosure giving further noise reduction up to 10 dB(A).

Based on the NSR heights and the site geometry in this case, it is estimated that, if properly used, the barriers/ enclosures can achieve a noise reduction of 10 dB(A) for stationary sources and 5 dB(A) for mobile sources. The noise screening benefit for each plant considered in this assessment is listed as follows :

- Stationary plant - 10 dB(A) reduction for mobile crane, bored piling machine, concrete pump, poker, and generator.
- Mobile plant - 5 dB(A) reduction for bulldozer, dump truck, excavator, hand-held breaker, lorry, concrete lorry mixer, road roller, bar bender and asphalt paver.

5.2.7 Mitigated Noise Impact

The residual impacts after (i) the use of quiet plant only and (ii) the use of quiet plant and mobile noise barriers/ enclosures are shown in Table 5-6 and Table 5-7 respectively for construction stages 1 and 3 to 5.

*Table 5-6 Predicted CNL (with silenced PME) at Various NSRs**

NSRs	**Stage 1**	**Stage 3**	**Stage 4**	**Stage 5**
C1	**76.0**	**77.8**	74.0	**77.5**
C2	**85.0**	**87.5**	**83.7**	**87.3**
C3	**82.7**	**85.2**	**81.4**	**84.9**
C4	65.8	68.4	64.6	68.1
C5	70.5	73.0	69.2	72.8
C6	73.5	**76.0**	72.2	**75.7**
C7	75.2	**77.8**	74.0	**77.5**
C8	**76.1**	**78.7**	74.9	**78.4**
C9	**79.7**	**82.2**	**78.4**	**81.9**
C10	**78.3**	**80.9**	**77.1**	**80.6**
C11	**78.3**	**80.9**	**77.1**	**80.6**
C12	**82.2**	**84.7**	**80.9**	**84.4**
C13	**80.8**	**83.4**	**79.6**	**83.1**
C14	**81.2**	**83.0**	**79.2**	**82.7**
C15	**84.5**	**86.3**	**82.5**	**86.0**
C16	**76.1**	**78.7**	**74.9**	**78.4**
C17	**77.2**	**79.7**	**75.9**	**79.4**

* Noise impact from percussive piling in Stage 2 is independently assessed in accordance with the methodology given in Section 5.2.4 Construction noise from Percussive Piling.

*Table 5-7 Predicted CNL (with silenced PME & mobile barriers/ enclosures) at Various NSRs**

NSRs	**Stage 1**	**Stage 3**	**Stage 4**	**Stage 5**
C1	71.0	68.4	69.0	72.5
C2	**80.0**	**78.1**	**78.7**	**82.3**
C3	**77.7**	**75.8**	**76.4**	**79.9**
C4	60.8	59.0	59.6	63.1
C5	65.5	63.6	64.2	67.8
C6	68.5	66.6	67.2	70.7
C7	70.2	68.4	69.0	72.5
C8	71.1	69.3	69.9	73.4
C9	74.7	72.8	73.4	**76.9**
C10	73.3	71.5	72.1	**75.6**
C11	73.3	71.5	72.1	**75.6**
C12	**77.2**	75.3	**75.9**	**79.4**
C13	**75.8**	74.0	74.6	**78.1**
C14	**76.2**	73.6	74.2	**77.7**
C15	**79.5**	**76.9**	**77.5**	**81.0**
C16	**71.1**	69.3	69.9	**73.4**
C17	**72.2**	70.3	**70.9**	**74.4**

* Noise impact from percussive piling in Stage 2 is independently assessed in accordance with the methodology given in Section 5.2.4 Construction noise from Percussive Piling.

As can be observed from Tables 5-5 and 5-6, using quiet plant and mobile barriers alone as noise mitigation measures is insufficient to lower noise levels at some of the selected NSRs to meet the assessment criteria for the worst case possible concurrent noisy activities. This is envisaged as some of the worst impacted NSRs are located in close proximity to the proposed road alignments. For the two affected kindergartens represented by NSRs C16 and C17, according to ProPECC PN 2/93, as a last resort, consideration should be given to provide acoustic insulation and air conditioning to these educational premises during the duration of the construction activities.

However, it must be realized that the assessment results can only represent the worst possible cases which theoretically could occur, but in reality are rare or unlikely. This is due to the requirement of assuming the concurrent operation of all concerned noisy plant, with all located at the same nearest notional point of each works area (except for the site formation area, all works areas are long and thin) to the NSR, and to all be fully active at exactly the same time. Even if these levels of construction noise impact, or impacts approaching these could occur, they will be of a very short duration only.

Based on the estimated construction rates for each stage of works, the period when the mitigated noise levels will still be exceeding the established noise guidelines for construction works between 7 a.m. to 7 p.m. have been estimated at each affected NSR. These are set out below in Table 5-8. Sample on calculation is provided in Appendix 7 for reference.

Table 5-8 Estimated Period when the Noise Guidelines will be exceeded

NSRs	**Period of Exceedance (working day)**			
	Stage 1	**Stage 3**	**Stage 4**	**Stage 5**
C1	N.A.	N.A.	N.A.	N.A.
C2	< 1.5 day	< 1.5 day	< 0.5 day	< 1 day
C3	< 1 day	< 0.5 day	< 0.5 day	< 1 day
C4	N.A.	N.A.	N.A.	N.A.
C5	N.A.	N.A.	N.A.	N.A.
C6	N.A.	N.A.	N.A.	N.A.
C7	N.A.	N.A.	N.A.	N.A.
C8	N.A.	N.A.	N.A.	N.A.
C9	N.A.	N.A.	N.A.	< 1 day
C10	N.A.	N.A.	N.A.	< 0.5 day
C11	N.A.	N.A.	N.A.	< 0.5 day
C12	< 1 day	N.A.	< 0.5 day	< 1 day
C13	< 0.5 day	N.A.	N.A.	< 1 day
C14	< 1 day	N.A.	N.A.	< 1 day
C15	< 1.5 day	< 1 day	< 0.5 day	< 0.5 day
C16	< 0.5 day	N.A.	N.A.	< 1 day
C17	< 1 day	N.A.	< 0.5 day	< 1 day

Note : N.A. - Not applicable (Noise guidelines for construction noise during 7 am to 7 pm are satisfied)

Nevertheless, the predicted results indicated that additional noise mitigation measures are required. It is envisaged that the implementation of good site practice, avoidance of simultaneous noisy activities and reduction in numbers of plants operating in critical areas close to NSRs will bring about a further reduction in construction noise impact.

(iii) Management Approach and Good Site Practice

Good site practice and noise management can significantly reduce the impact of a construction site's activities on nearby NSRs. To provide significant noise reduction on site, the following measures should be followed during each phase of construction :

- the Contractor shall comply with and observe the Noise Control Ordinance (NCO) and its current subsidiary regulation in force in Hong Kong;
- before the commencement of any work, the Contractor shall submit to the Project Manager for approval the method of working, equipment and sound-reducing measures intended to be used at the site;

- the Contractor shall devise, arrange methods of working and carry out the works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented;
- only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;
- machines that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- silencer and mufflers on construction equipment should be utilised and should be properly maintained during the construction programme;
- noisy activities can be scheduled to minimise exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours);
- noisy equipment such as emergency generators shall always be sited as far away as possible from noise sensitive receivers;
- mobile plant should be sited as far away from NSRs as possible; and
- material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.

(iv) Avoid simultaneous noisy activities and reduction in no. of plants

Other noise mitigation measure such as avoidance of simultaneous noisy activities and a reduction in the numbers of plants operating in critical areas close to NSRs may be required from time to time.

Since it is difficult to provide quantitative predictions of the effect these further mitigation measures will have on noise levels, and it is not possible to identify when will they occur, the effectiveness of the introduced noise mitigation measures have to be monitored during the construction phase. This will enable the contractor to react if the assessment criteria are approached by reducing noise emission at specific areas. Details on noise monitoring requirements, methodology and action plan, etc. are described in the Environmental Monitoring and Audit (EM&A) Report (Report ref.: R718.96).

5.2.8 Assessment Results - Noise from Percussive Piling

The predicted CNL at the worst impacted NSRs for noise from percussive piling is presented below in Table 5-9. By comparing the obtained CNL at the worst impacted NSRs with the ANL, the appropriate permitted hours of operation was determined as shown in Table 5-10.

It should be noted that should the assumed piling method and pile type be changed, or additional number of percussive piling units are used, the noise impact from percussive piling should be re-assessed to determine the appropriate permitted hours of operation, with the assessment criteria and procedure as stated in the TM2. In any case, however, the predicted "Appropriate Permitted Hours" for percussive piling in this EIA should be considered as a reference only. The actual Permitted Hours of Operation shall be determined by the Authority, with the restrictions on the hours during which percussive piling will be allowed specified in a Construction Noise Permit (CNP), will have to be applied from the Authority for percussive piling activities.

Table 5-9 Calculated CNL at the worst impacted NSRs

NSRs	**Calculation**	**CNL (dB(A))**	**ANL (dB(A))**	**Exceedance = CNL - ANL (dB(A))**
For Percussive Piling at PL1 :				
P1	126 - 37 + 3	92	85	7
P2	126 - 37 + 3	92	85	7
P3	126 - 44 + 3	85	85	No exceedance
P4	126 - 45 + 3	84	85	No exceedance
For Percussive Piling at PL2 :				
P5	126 - 38 + 3	91	85	6
P6	126 - 42 + 3	87	85	2
P7	126 - 44 + 3	85	85	No exceedance
P8	126 - 47 + 3	82	85	No exceedance

Table 5-10 Appropriate Permitted Hours of Operation for Percussive Piling

Pile Location	**Amount by which CNL exceeds ANL**	**Appropriate hours of operation on any day not being a general holiday**
PL1	Between 1 dB(A) to 10 dB(A)	**0800 to 0930 AND 1200 to 1400 AND 1630 to 1800**
PL2	Between 1 dB(A) to 10 dB(A)	**0800 to 0930 AND 1200 to 1400 AND 1630 to 1800**

5.2.9 Conclusion

The assessment shown that without any effective mitigation measures, noise from construction activities other than percussive piling of the proposed site formation and road works will likely exceed the assessment criteria at most of the selected worst impacted NSRs during weekday hours. Even with the use of silenced PME and mobile barriers/ enclosure as mitigation, it is predicted that the noise impact at some NSRs would still be exceeding the noise guidelines for construction works during the non-restricted hours. Additional mitigation measures such as noise insulation for the affected educational premises and good site practice have been recommended. Recommended construction noise mitigation measures shall be implemented through incorporation into contract specifications.

The effectiveness of the noise control measures shall be monitored by Environmental Monitoring and Audit requirements throughout the construction period which will ensure compliance with the noise criteria by providing feedback to the contractor to provide additional measures such as the reduction of the number of plants working simultaneously within a worksite near to an NSR as required. Detailed EM&A requirements are given in the Environmental Monitoring and Audit Report (R718/96).

Regarding noise impact from percussive piling, a Construction Noise Permit has to be applied from EPD. The appropriate permitted hours of operation has been determined for reference, based upon the likely piling method and pile type that will be used and the location of the nearest sensitive receivers in the vicinity in accordance with the procedure specified in the TM2.

5.3 Operational Phase Impact

5.3.1 Introduction

The potential noise impact after the commissioning of the proposed road scheme is presented in the following sections. With the current rapid pace of development in Hung Shui Kiu, it is envisaged that existing rural features will soon be replaced by new designated land uses. This process will take some time and will still be in progress after the completion of the proposed road scheme. Therefore, both existing and future sensitive receivers have been selected for the Traffic Noise Impact Assessment. A noise model has been employed to investigate the potential traffic noise impact. Effective mitigation measures have been recommended where necessary to reduce noise impacts to acceptable levels.

5.3.2 Noise Assessment Criteria

Noise standards are recommended in the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against noise impact from sources such as road traffic, railway and aircraft. According to the guidelines, the maximum noise level from road traffic, measured in terms of L_{10}(1-hr) is recommended to be 70 dB(A) at all domestic premises, 65 dB(A) at educational premises and places of public worship, and 55 dB(A) at clinics. The noise standards apply to uses which rely on opened windows for ventilation. These noise standards are used as the assessment criteria for the current study on potential traffic noise impact on existing and future NSRs.

Based on the general principle set down in the memorandum for Executive Council "Equitable Redress for Persons Exposed to Increased Noise Resulting from The Use of New Roads", direct noise mitigation measures shall be implemented wherever practicable to alleviate the noise impact at Noise Sensitive Receivers (NSRs) to meet the noise standards. Regarding existing NSRs, where there would still be residual noise impact exceeding the noise standards after the implementation of all practicable direct measures, indirect measures in the form of noise insulation and the provision of air conditioning should be considered. The following criteria have been used to determine which existing NSRs would be eligible for consideration for indirect measures. An existing NSR would need to meet all of the three criteria in order to be eligible for consideration of indirect measures.

(i) the predicted overall noise level from the new road together with other traffic noise in the vicinity must be above a specified noise level [e.g. 70dB(A) L_{10}(1 hour) for domestic premises];

(ii) the predicted overall noise level is at least 1.0dB(A) more than the prevailing traffic noise level, i.e. the total traffic noise level existing before the works to construct the road were commenced; and

(iii) the contribution to the increase in the predicted overall noise level from the new road must be at least 1.0dB(A).

5.3.3 Assessment Methodology

The assessment of noise impacts for the proposed roadworks presented here is based on standard acoustic principles. The assessment involved the prediction of the hourly L_{10} noise levels at the representative worst impacted existing and future Noise Sensitive Receivers (NSRs) generated from future traffic flows on the proposed road alignments. The methodology used were based upon the U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" (CRTN). The predicted noise levels were then assessed by comparing with the noise assessment criteria given under section 5.3.2.

Figure 5-2 shows the design of the proposed road scheme and the existing surrounding environs. Width of roads, footpaths and bicycle paths are marked with road levels given in mPD height. The predicted 2011 A.M. peak hour traffic flows together with the percentage of heavy vehicles given in brackets are also presented. Location of existing NSRs (E1 to E19) and future NSRs (F1 to F22) selected for the noise impact assessment are given in the drawing. Height and location of existing solid fence walls, where present at the NSRs, are also marked.

Typical elevation view of the proposed new roads are shown in Figure 5-3. Planned land use zonings in the study area have been presented in Figure 3-2. Details of important parameters required for the traffic noise impact assessment are further discussed below.

5.3.4 Traffic Forecast During Operation

Traffic forecast on the proposed road network for the year 2011 has been predicted by the Project Traffic Consultant, MVA ASIA Limited based on Government's future land-use assumptions. These traffic data used for the traffic noise modeling have been agreed with Transport Department.

Predicted AM peak hour traffic flows in year 2011, together with the percentage of heavy vehicles shown in brackets are set out in Figure 5-2. Other parameters of road design are set out below in Table 5-11.

Table 5-11 Characteristics of the Proposed Road Network

Road	Road Type	Speed Limit (km/hr)	Road Width[a] (m)	Surface Type
D1[b]	single two-lane carriageway	50	10.3	Impervious
D2	single two-lane carriageway	50	10.3	Impervious
L1	single two-lane carriageway	50	10.3	Impervious
L2	single two-lane carriageway	50	10.3	Impervious
L3	single two-lane carriageway	50	7.3	Impervious
L4[c]	single two-lane carriageway	50	7.3	Impervious
L5	single two-lane carriageway	50	7.3	Impervious
L6	single two-lane carriageway	50	7.3	Impervious
L12	single two-lane carriageway	50	6.75	Impervious
L13	single two-lane carriageway	50	6.75	Impervious
L14	single two-lane carriageway	50	6.75	Impervious
L15	single two-lane carriageway	50	7.3	Impervious

[a] Excluding width of cycle track/ footpath, if any.

[b] Road D1 will be formed by widening of the existing Tin Ha road.

[c] L4 will be upgraded from the existing Tan Kwai Tsuen Road.

It can be observed from Figure 5-2 that except for the distributors Roads D1 and D2, future traffic flows on the proposed roads are relatively low.

For the proposed widening work at Tin Ha Road (Road D1), as the alignment, number of lanes as well as the speed limit of the road will remain unchanged after widening, and the proposed widening works will only be bringing the existing road to meet current road standards, the widened Tin Ha Road is not considered as a new road for the purpose of noise assessment in this report.

On the same ground, Road L4 upgraded from the existing Tan Kwai Tsuen Road is not considered as a new road as the number of lanes and speed limit on the road will remain unchanged after the project.

The existing traffic flows and percentage of heavy vehicles on Tin Ha Road and Tan Kwai Tsuen Road for the year 1996 have been surveyed by the Project Traffic Consultant. These are set out below in Table 5-12.

Table 5-12 Existing Traffic Flows and % of Heavy Vehicles on the Existing Roads in the Project

Tin Ha Road	**AM Peak (Year 1996)**	**PM Peak (Year 1996)**
Total Vehicles / Hour	300	387
% of Heavy Vehicles	37	37
Tan Kwai Tsuen Road	**AM Peak**	**PM Peak**
Total Vehicles / Hour	142	106
% of Heavy Vehicles	8	21

5.3.5 Noise Sensitive Receivers

Both existing and future noise sensitive receivers (NSRs) and planned noise sensitive land uses within the study area have been represented in the road traffic noise impact assessment. These NSRs and planned noise sensitive land uses are described below in the following subsections.

Existing Noise Sensitive Receivers

Existing NSRs situated along the proposed road alignments within the study area have been identified through site visits. Lands for the proposed road alignments and associated footpaths, cycle tracks and planting strips will be resumed and hence existing NSRs lying within these areas have not been selected for the noise impact assessment. Affected NSRs chosen for the assessment include recently built private developments such as Parkview Garden and Meadowlands as well as village houses that are not expected to be redeveloped before the commissioning of the proposed roadworks.

Locations of the selected representative NSRs (El to E19) are shown in Figure 5-2. The assessment points have all been taken to be located at 1 m away from the building facade. Noise shielding effects of existing solid fence walls have been taken into account in the assessment for NSRs E4 and E11 to E13. Location and approximate height of these fence walls are also indicated in Figure 5-2.

Identity of the NSRs, with ground level heights, floor numbers and assessment heights, as well as the shortest distance of the assessment points from the kerbside of the concerned roads are given below in Table 5-13. The approximate numbers of existing dwellings, classrooms (for schools) or church that can be represented by each of the selected NSRs are also listed in the Table.

Site investigations have revealed that existing sensitive receivers facing the widened Road D1 are mainly located north of Tin Sum Road. i.e. village houses in Tin Sum Tsuen and San Lei Uk Tsuen. The road section between Tin Sum Road and Castle Peak Road are generally occupied by non-sensitive uses such as industrial buildings and storage facilities, through a few existing village houses (represented by NSRs E16 to E19) have also been identified in the area.

At present, only a few village houses are situated along the northern boundary of Road D2 with the rest of the area occupied by agricultural lands. Located to the southern side of Road D2 is Area 13 which has been designated for development of the proposed rural public housing estate. Construction activities for the proposed rural public housing estate in Area 13 would start before the commissioning of the proposed road scheme (see Appendix 8). As existing NSRs in the area will have been demolished during the operation phase of the Project, future traffic noise impacts on these existing NSRs will not be a concerned. No existing NSRs have therefore been selected within Area 13.

Table 5-13 Identity of the Selected Existing Representative NSRs

Existing NSRs	**NSR**	**Ground Elevation (mPD)**	**Floors**	**Assessment Heights (mPD)**	**Shortest Distance of Assessment Point from Kerbside of Road**	**Approximate no. of dwellings (d)/ classrooms (c)/ other NSRs represented**
E1	Village House	7.3	gf / 1st/ 2nd	8.5/ 11/ 13.5	23.9 m from Road D1	9d
E2	Church	8.5	gf/ 1st	9.7/ 12.7	10.5 m from Road D1	6d + 1 church
E3	Village House	8.5	gf/ 1st/ 2nd	9.7/ 12.2/ 14.7	21.2 m from Road D1	13d
E4	Kindergarten	9.3	gf/ 1st	10.5/ 12.5	10.7 m from Road D1	2c
E5	Village House	12.0	gf/ 1st/ 2nd	13.2/ 15.7/ 18.2	75.0 m from Road D1	6d
E6	Parkview Garden	11.2	gf/ 1st/ 2nd/ 3rd/ 4th	12.4/ 15.4/ 18.4/ 21.4	6.1 m from Road L12	12d
E7	Village House	6.7	gf/ 1st/ 2nd	7.9/ 10.4/ 12.9	10.8 m from Road D2	12d
E8	Village House	8.5	gf	9.7	30.2 m from L2	2d
E9	Kindergarten	9.8	gf	11.0	13.3 m from Road L1/ L2	2c
E10	Village House	9.8	gf	11.0	6.4 m from Road L1	2d
E11	Bauhinia Garden	13.2	1st/ 2nd/ 3rd	17.4/ 20.4/ 23.4	10.1 m from Road L15	30d
E12	Bauhinia Garden	12.7	1st/ 2nd/ 3rd	16.9/ 19.9/ 22.9	10.2 from Road L3	24d
E13	Bauhinia Garden	13.0	1st/ 2nd/ 3rd	17.2/ 20.2/ 23.2	8.9 from Road L15	24d
E14	Primary School	16.0	gf/ 1st	17.2/ 20.2	3.8 m from Road L4	4c
E15	Meadowlands	19.5	1st/ 2nd/ 3rd	23.7/ 26.7/ 29.7	41.9 m from Road L4	18d
E16	Village House	11.0	gf/ 1st	12.2/ 14.7	5.7 m from Road D1	4d
E17	Village House	11.4	gf	12.6	3.0 m from Road D1	1d
E18	Village House	11.2	gf	12.4	12.4 m from Road D1	2d
E19	Village House	11.2	gf	12.4	11.1 m from Road D1	1d

N.B. gf = ground floor

Future Noise Sensitive Receivers

As described in section 3.2.2, Hung Shui Kiu area will gradually be replaced by new designated land uses. However, as future developments will depend on private initiatives and should take some time even after the commissioning of the proposed road scheme, master layout plans for future developments were not available for the assessment.

The proposed rural public housing estate in Area 13 is still under preliminary planning and no detailed building design has yet been formulated (see Appendix 8 for the letter from the HKHS). Although a very preliminary layout plan of the rural public housing estate has been obtained from the HKHS (also provided in Appendix 8), further discussions with the HKHS have confirmed that major changes would likely be made to the preliminary design layout. As a result, assessment of potential noise impact on the rural public housing estate has only been conducted by modelling noise levels at representative worst-impacted locations.

The assessment of potential traffic noise disturbances on future NSRs has been made possible through a conservative approach. Depending upon the future NSRs involved, noise levels have been predicted at selected assessment points taken to be situated at 5m or 10m away from the edge of zone boundary along the road carriageways. The 5m or 10m distance separation has been assumed after taking into consideration the planned land uses involved, available site area, typical layout plans for similar developments (e.g. schools), and by making reference to distance separation of existing NSRs from edge of zone boundary (e.g. for village houses).

Based on the designated future land uses, planned NSRs or potentially affected noise sensitive land use zonings have been identified. Representative future NSRs have been selected for the traffic noise impact assessment. Identity and location of the selected future NSRs (F1 to F22) are shown in Table 5-14 and Figure 5-2, respectively. The designated land uses, the assumed maximum building heights, together with the shortest distance of the selected NSRs from the edge of zone boundary along roads are also shown in Table 5-14.

It has been assumed that the selected future NSRs will have a direct line-of-sight to the road of concern and hence the modelled noise levels shall represent the worst case situations. Maximum building heights for residential premises have been assumed based on design parameters/ restrictions given in the relevant outline zoning plans gazetted in June 1996. For the proposed area community centre (which comprises a post office, a children and youth centre, and a nursery), school, and clinic situated in Planning Areas 6, 7 and 8 respectively, the building heights have been assumed based on typical heights of similar facilities.

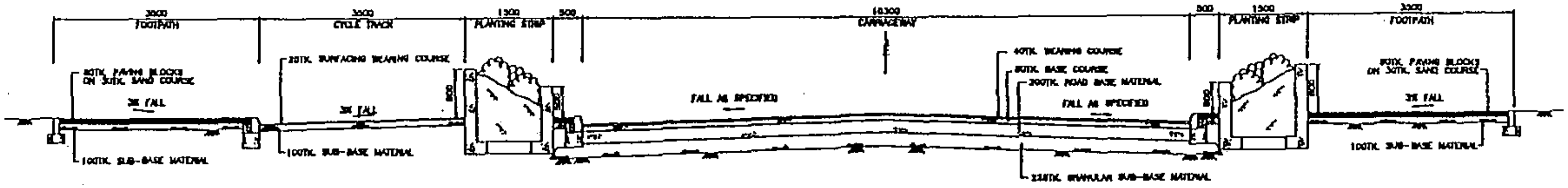
Table 5-14 Information on Selected Future NSRs

Future NSRs	**Future Land Use,Zoning ***	**Maximum Building Height**	**Assumed Ground Elevation (mPD)**	**Assumed Shortest Distance of NSRs from Site Boundary**
F1	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	11.4	5m
F2	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	10.1	5m
F3	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	9.5	5m
F4	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	9.5	5m
F5	Comprehensive Development Area, [CDA]	20 storeys above podium	10.1	5m
F6	Residential (Group A) 2 [R(A)2]	12 storeys	10.0	5m
F7	Residential (Group B) 1 [R(B)1]	4 storeys over single-storey carport	11.9	5m
F8	Residential (Group B) 1 [R(B)1]	4 storeys over single-storey carport	7.2	5m
F9	Rural public housing estate, [R(A)3]	19 storeys above podium	8.0	10m
F10	Rural public housing estate, [R(A)3]	19 storeys above podium	8.0	10m
F11	Rural public housing estate, [R(A)3]	19 storeys above podium	8.0	10m
F12	Rural public housing estate, [R(A)3]	19 storeys above podium	8.0	10m
F13	Village Type Development, [V]	3 storeys	6.5	10m
F14	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	7.4	5m
F15	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	8.2	5m
F16	Residential (Group B) 2 [R(B)2]	6 storeys over single-storey carport	11.6	5m
F17	Residential (Group C) [R(C)]	3 storeys including carport	11.2	5m
F18	Education, [E] [in Area 7]	7 storeys	8.8	10m
F19	Area Community Centre - with a day nursery [in Area 6]	6 storeys	9.3	10m
F20	Clinic [in Area 8]	3 storeys	9.7	10m
F21	Residential (Group A) 2 [R(A)2]	12 storeys	10.4	5m
F22	Comprehensive Development Area, [CDA]	20 storeys above podium	10.6	5m

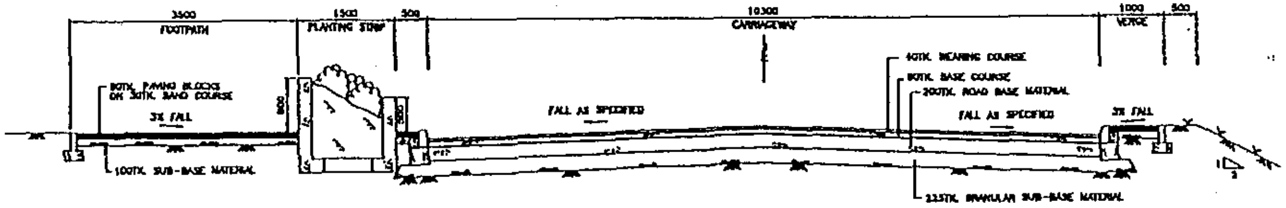
* Based on the Ping Shan OZP No. S/YL-PS/1, Tong Yan San Tsuen OZP No. S/YL-TYST/1 and Lam Tei Yick Yuen OZP No. S/TM-LTYY/1 gazetted in June 1996, as well as information provided by the Planning Department.

Figure : 5-3a

Scale : ---



TYPICAL CROSS SECTION OF ROAD L2



TYPICAL CROSS SECTION OF ROAD D2

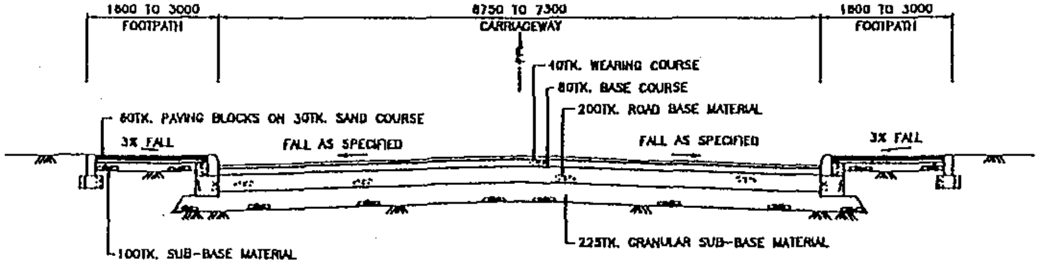
TITLE : Typical Elevation View of the Proposed New Roads

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

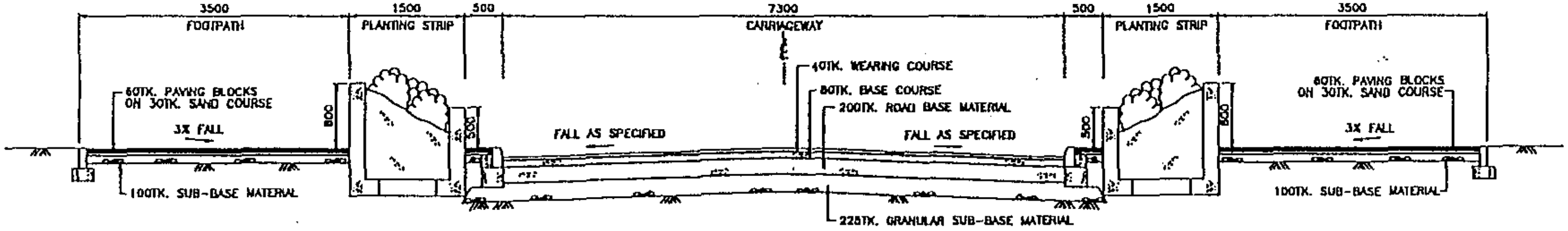
EHS Consultants Limited

Figure : 5-3b

Scale : ---



TYPICAL CROSS SECTION OF ROADS L3, L4, L12, L13, L14 AND L15



TYPICAL CROSS SECTION OF ROAD L5

TITLE : Typical Elevation View of the Proposed New Roads

PROJECT : Territory Development Department (CE 34/93)
EIA Study for Hung Shui Kiu

EHS Consultants Limited

5.3.6 Predicted Traffic Noise Levels

The predicted noise levels at the selected existing and future NSRs are presented below in Table 5-15 and Tables 5-16, respectively. Noise levels that are exceeding the relevant HKPSG Noise Standards are shown in bold.

Table 5-15 Unmitigated Traffic Noise Level at the selected Existing NSRs in dB(A), L_{10}(1-hr)

Existing NSRs	Floors	Assessment Heights Considered (mPD)	Prevailing Traffic Noise Levels	2011 Traffic Noise Levels (No mitigation)	HKPSG Noise Criteria L_{10}(1-hr) dB(A)
E1	gf/ 1st/ 2nd	8.5/ 11/ 13.5	69/ 69/ 69	**76/ 76/ 76**	70
E2	gf/ 1st	9.7/ 12.7	63/ 67	**70/ 74**	65
E3	gf/ 1st/ 2nd	9.7/ 12.2/ 14.7	68/ 68/ 68	**75/ 75/ 75**	70
E4	gf/ 1st	10.5/ 12.5	60/ 63	**69/ 71**	65
E5	gf/ 1st/ 2nd	13.2/ 15.7/ 18.2	58/ 58	66/ 66/ 66	70
E6	gf/ 1st/ 2nd/ 3rd/ 4th	12.4/ 15.4/ 18.4/ 21.4/ 24.4	N/A	52/ 52/ 52/ 52/ 52	70
E7	gf/ 1st/ 2nd	7.9/ 10.4/ 12.9	N/A	**76/ 76/ 76**	70
E8	gf	9.7	N/A	66	70
E9	gf	11.0	N/A	**70**	65
E10	gf	11.0	N/A	65	70
E11	1st/ 2nd/ 3rd	17.4/ 20.4/ 23.4	N/A	68/ 69/ 69	70
E12	1st/ 2nd/ 3rd	16.9/ 19.9/ 22.9	N/A	69/ 70/ 70	70
E13	1st/ 2nd/ 3rd	17.2/ 20.2/ 23.2	N/A	67/ 70/ 69	70
E14	gf/ 1st	17.2/ 20.2	60/ 60	60/ 60	65
E15	1st/ 2nd/ 3rd	23.7/ 26.7/ 29.7	46/ 46/ 46	46/ 46/ 46	70
E16	gf/ 1st	12.2/ 14.7	70/ 70	**78/ 78**	70
E17	gf	12.6	**74**	**81**	70
E18	gf	12.4	70	**76**	70
E19	gf	12.4	70	**78**	70

It can be observed from the modelling results that, except for the existing NSRs (E1-E4, E7, E16 to E19) that are lying along Roads D1 and D2 as well as the existing kindergarten (E9) situated along Road L1, the HKPSG noise standards can be met at all other existing NSRs.

Table 5-16 Unmitigated Traffic Noise Level at Future NSRs in dB(A), L_{10}(1-hr)

Future NSRs	**Representative Floors**	**Assessment Height (mPD)**	**2011 Noise Levels, L_{10} (1-hr) dB(A) (No mitigation)**	**HKPSG Noise Criteria L_{10}(1-hr) dB(A)**
F1	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.6/ 18.6/ 21.6/ 24.6/ 27.6/ 30.6	**80/ 80/ 79/ 79/ 78/ 77**	70
F2	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	14.3/ 17.3/ 20.3/ 23.3/ 26.3/ 29.3	**80/ 80/ 79/ 78/ 78/ 77**	70
F3	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	13.7/ 16.7/ 19.7/ 22.7/ 25.7/ 28.7	66/ 66/ 66/ 65/ 65/ 65	70
F4	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	13.7/ 16.7/ 19.7/ 22.7/ 25.7/ 28.7	65/ 65/ 65/ 65/ 65/ 65	70
F5	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 20th	14.3/ 20.3/ 26.3/ 32.3/ 41.3/ 56.3/ 71.3	67/ 66/ 65/ 64/ 63/ 62/ 60	70
F6	1st/ 3rd/ 5th/ 7th/ 9th/ 11th	14.2/ 20.2/ 26.2/ 32.2/ 38.2/ 44.2	69/ 69/ 68/ 68/ 67/ 66	70
F7	1st/ 2nd/ 3rd/ 4th	16.1/ 19.1/ 22.1/ 25.1	65/ 65/ 65/ 65	70
F8	1st/ 2nd/ 3rd/ 4th	11.4/ 14.4/ 17.4/ 20.4	58/ 58/ 58/ 58	70
F9	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	**75/ 75/ 74/ 73/ 73/ 71/ 71/ 71/ 70/ 70**	70
F10	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	**76/ 75/ 74/ 74/ 73/ 71/ 71/ 71/ 71/ 70**	70
F11	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	67/ 67/ 67/ 66/ 65/ 64/ 63/ 63/ 63/ 63	70
F12	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	70/ 69/ 69/ 68/ 67/ 66/ 66/ 66/ 65/ 65	70
F13	gf/ 1st/ 2nd	7.7/ 10.2/12.7	**77/ 77/ 77**	70
F14	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	11.6/ 14.6/ 17.6/ 20.6/ 23.6/ 26.6	**75/ 75/ 75/ 74/ 74/ 73**	70
F15	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	12.4/ 15.4/ 18.4/ 21.4/ 24.4/ 27.4	70/ 69/ 69/ 69/ 68/ 68	70
F16	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.8/ 18.8/ 21.8/ 24.8/ 27.8/ 30.8	**78/ 78/ 77/ 77/ 77/ 76/ 76**	70
F17	1st/ 2nd	15.4/ 18.4	**79/ 79/ 78**	70
F18	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	10.0/ 13.0/ 16.0/ 19.0/ 22.0/ 25.0/ 28.0	**69/ 69/ 69/ 69/ 68/ 68/ 68**	65
F19	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th	10.5/ 13.5/ 16.5/ 19.5/ 22.5/ 25.5	**69/ 69/ 69/ 69/ 69/ 69**	65
F20	gf/ 1st/ 2nd/ 3rd	10.9/ 13.9/ 16.9/ 19.9	**69/ 69/ 69/ 69**	55
F21	1st/ 3rd/ 5th/ 7th/ 9th/ 11th	14.6/ 20.6/ 26.6/ 32.6/ 38.6/ 44.6	64/ 64/ 63/ 63/ 62/ 61	70
F22	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 20th	14.8/ 20.8/ 26.8/ 32.8/ 41.8/ 56.8/ 71.8	70/ 70/ 70/ 69/ 68/ 66/ 65	70

Without any available master layout plans for future developments in Hung Shui Kiu, assessment on traffic noise impact on future NSRs have been conducted with a conservative approach. All future NSRs have been assumed to have an unobstructed angle of view to the road of concern, and without any noise mitigation measures. Therefore, the predicted noise levels would represent the worst case situations. It is envisaged that the actual noise impacts are much smaller when factors such as building design and orientation and solid fence walls at site boundary could be taken into account in the assessment.

Nevertheless, the results indicated that without any noise mitigation measures, future noise sensitive developments situated along the proposed Roads D1 and D2 will likely be impacted by traffic noise. Noise levels at the nursery (one element of the proposed community centre), school and clinic situated in Area 7, 8 and 9 along Road L1 have also been predicted to exceed the relevant traffic noise standards. Practicable direct mitigation measures are required to minimise potential environmental constraints on future noise sensitive land uses along the road carriageways.

5.3.7 Noise Mitigation Measures

The assessment results presented in the above section indicated that the affected NSRs include the followings :

(i) existing and future NSRs situated along Roads D1 and D2;

(ii) existing kindergarten located near the junction of L1 and L2;

(iii) proposed nursery (as one element of the proposed area community centre), school and clinic lying along Road L1.

Effective direct noise mitigation measures shall be incorporated into the proposed projects as far as practicable to protect both existing and future NSRs from future traffic noise impact.

Noise Mitigation Measures Considered to be Impracticable

Judging from the constraints of the study area, the following direct technical remedies have been carefully considered for Roads D1, D2 and L1 but have been found to be impracticable :

(i) Alternative alignment of the Roads -

Alternative alignment of Roads D1, D2 and L1 is considered impossible owing to the site constraints involved. For example, the alternative alignment of the concerned roads will only shift the traffic noise impact to other existing/ future NSRs located in the area.

(ii) Paving road surface with open texture -

The use of open texture along Roads D1, D2 and L1 is not considered practicable since the speed limit on these roads is only 50 kph. The presence of numerous bus stops along Road D1, together with frequent junctions along all three concerned roads would also result in stop-start traffic, leading to accelerated wear and tear on the friction course and the need of impracticably frequent maintenance.

(iii) Partial or Full Enclosure of Roads -

This option is considered impracticable from the safety viewpoint as "canopy" formed by partial/ full enclosures of the concerned sections of Roads D1, D2 or L1 will inevitably obstruct access by fire engines via turntable ladder/ hydraulic platform to existing or future NSRs situated along the road carriageways in cases of fire. It will also be a source of visual intrusion. In addition, similar to the erection of roadside noise barriers, it may restrict pedestrian access to nearby developments which would require careful design of the road carriageways.

Proposed Noise Mitigation Measures

The erection of roadside noise barriers has been identified to be the only possible option of practicable direct noise mitigation measure along the concerned road carriageways, subject to various identified site constraints. After taking into consideration of these constraints, a noise mitigation proposal in terms of roadside noise barriers has been determined. Location of the proposed noise barriers is shown in Figure 5-2, with further details of these barriers given in Table 5-17. The site constraints which have been considered are described in the following section.

Table 5-17 Details on Proposed Noise Barriers

Noise Barrier	Location	Barrier Height	Length	Major NSRs Protected
D2EB-1	Eastbound of Road D2; at 0.6m from kerbside	2m	120m	Existing and future NSRs in designated "V" site
D2EB-2	Eastbound of Road D2; at 0.6m from kerbside	2m	163m	Existing and future NSRs in designated "V" site
D2WB-1	Westbound of Road D2; at interface of planting strip and footpath	5m	70m	Future developments in designated "R(B)2" site
D2WB-2	Westbound of Road D2; at interface of planting strip and footpath	5m	154m	Proposed rural public housing estate in designated "R(A)3" site
L1EB-1	Eastbound of Road L1; at interface of planting strip and cycle track	3m	106m	Proposed nursery (within area community centre) and school in Areas 6 and 7 respectively
L1EB-2	Eastbound of Road L1; at interface of planting strip and cycle track	3m	63m	Proposed nursery (within area community centre) and school in Areas 6 and 7 respectively

Various Site Constraints considered in the Development of Noise Mitigation Proposal

(i) Existing run-ins or accesses along Road D1 (widened Tin Ha Road)

Based on the drawing numbered N1078/WD/052 provided by the Highways Department, there are numerous existing run-ins/ accesses along Tin Ha Road that will still have to be maintained even after the proposed road widening works, as advised by District Land Office/ Yuen Long. The locations of these existing run-ins/ accesses (numbered as 1 to 40) are reproduced in Figure 5-2.

With the preservation of these run-ins/ accesses as a pre-condition, and taking into consideration safety factors such as sight-line/ visibility requirements that will have to be met near all possible vehicular ingress/ egress points (1 to 40), as well as the ineffectiveness of the noise reduction effect by erecting solely few and short noise barriers along the road carriageway, as pointed out by the Highways Department, the erection of noise barriers along the widened Tin Ha Road is not considered to be a feasible or an effective noise mitigation option.

(ii) Bus Stops along Road D1

In addition to the existing run-ins/ accesses, there will be four planned bus bays along the widened Tin Ha Road (marked as BB1 to BB4 in Figure 5-2). The erection of noise barriers along their length at kerbside is impossible as this will block passengers from getting on or alighting buses. Although it is possible to overcome this constraint by placing noise barriers behind footpaths, given the impracticability of erecting noise barriers near all existing run-ins/ accesses along Road D1 as detailed above, the provision of noise barriers with short length near bus bays is not considered as an effective noise mitigation measure.

(iii) Existing kindergarten along Road D1

Near the existing kindergarten situated along Road D1 near Tin Sum Road, there will not be sufficient space to allow the provision of the bicycle track section directly in front of the kindergarten. This space limitation excluded the possibility of erecting roadside barrier along the length of the school, should the existing kindergarten is to be preserved.

(iv) Existing vehicular access to villages

Along Road D1, there are the existing Tin Sum Road leading to Tin Sum Tsuen and the side road leading to San Lee Uk Tsuen. These vehicular accesses to villages will have to be maintained. On the other hand, on the northern boundary of the proposed Road D2, there is also an existing vehicular access leading to Shek Po Tsuen from Road D2 which will need to be retained for villagers.

(v) Planting strips along Road D2 and Road L1

There will be areas reserved for "planting strips" along the proposed Roads D2 and L1. In order to allow for the regular irrigation of the plants, the proposed noise barriers, namely L1EB1, L1EB2, D2WB1 and D2WB2 have to be placed at the interface of planting strip and cycle track (for barriers L1EB1 and L1EB2)/ footpath (for barriers D2WB1 and D2WB2) rather than at kerbside.

(vi) Fire

Potential adverse impacts on fire fighting operation in terms of access to existing or future developments along the new or improved roads, access to fire hydrants and radio communication, etc. have been preliminary examined during the development of the direct noise mitigation proposal.

Since vehicular ingress/ egress for the proposed rural public housing estate in Area 13 is planned to be situated along Roads L1 and L2 but not at Road D2, the erection of the proposed noise barrier D2WB2 along the northern boundary of the site would unlikely create an adverse effect on fire fighting. Similarly, for the "R(B)2" site along Road D2, the provision of the roadside barrier D2WB1 would unlikely create any adverse effect on fire fighting operation in the future as vehicular access to the site is reserved along Road L2. An access road to existing and future village houses along the northern boundary of Road D2 is also reserved near the junction of Roads D2 and L2.

Nevertheless, requirements of the Fire Services should be sought prior to the detailed design of the proposed noise barriers as well as any supporting structures that need to be erected adjacent to the noise barriers.

The structural integrity of the barriers shall also be designed such that they will not collapse in case of fire.

(vii) Traffic/ Engineering

The noise mitigation proposal in form of noise barriers has been devised with consideration of their proximity to the shoulder of the carriageway and effects on line of sight. Thus, kerbside noise barriers are recommended to be situated at 0.6m away from road kerb to satisfy the horizontal clearance requirement specified in Table 3.5.2.1 of the Transport Planning and Design Manual Vol. 2. For the proposed noise barriers to be situated at the interface of planting strips and footpaths/ cycle tracks, the minimum horizontal clearance requirement can also be met.

Near road junctions, relevant sight-line requirements as specified in clause 4.3.8 and diagram 4.3.8.1 of the Traffic Planning Design Manual Volume 2.4 have been considered. Adequate visibility are maintained by eliminating sections of noise barriers that would obstruct the sight-line of drivers. For example, near the existing kindergarten (NSR E9), whereas noise modelling has indicated that a relatively short noise barrier can be erected along the kerbside near the road junction, consideration of the relevant sight-line/ visibility requirement has excluded this option.

(viii) Visual Impact

The potential impact of the proposed barriers on the existing visual context is generally proportional to the dimension of the structures. As such, it is considered that the potential visual impacts caused by the proposed 5m high roadside noise barriers (along the westbound of a Road D2 section) will be higher than that of the 3m high roadside barriers (along the eastbound of a Road L1 section) which will in turn be slightly higher than that caused by the 2m high noise barriers (along the eastbound of a Road D2 section). With proper design techniques and landscape treatment, it is considered that the visual impact arising from the proposed noise barriers can be softened to acceptable levels. Possible techniques which can be employed are described below :

Functional

- Durable material with minimum maintenance requirements and costs should be used;
- Construction of supporting structures for the noise barriers should be minimised to avoid disturbance to surrounding open space, pedestrian ways and facilities. This can be achieved by the adoption of high-strength structures and/ or construction of a deeper foundation.

Aesthetic

- The proposed colour of the roadside barriers should take into consideration the chromatic "mood" of the local environment. As the proposed barriers are all situated in rural setting, a predominantly green colour scheme for the proposed barriers would be suitable.
- Transparent acrylic sheets (e.g. Plexiglass) can be used in the noise barriers to minimise the visual impact. The proposed barriers would also be screened or decorated with existing plants or additional plantation including trees.

(ix) Installation Works

For installation work during restricted hours (1900-0700 hours on Weekdays and all hours on Sundays and Public Holidays), the contractor will need to apply for and obtain a Construction Noise Permit with respect to the Noise Control Ordinance. However, it is unlikely that night time (2300-0700 hours) installation will be acceptable even with mitigation. Transport Department may also require the contractor to carry out a traffic impact assessment which should follow Highways Department Guidance Note RD/GN/021, in order to demonstrate that all proposed traffic management measures during construction will be effective.

(x) Pedestrian Access

Potential constraints posed by noise barriers on pedestrian crossing along road sections have been evaluated during the development of the noise mitigation proposal. Sufficient space have been retained for pedestrian crossings and the proposed location of the noise barriers is considered feasible.

There will be planned planting strips along the southern boundary of Road D2. As the proposed noise barriers will only be situated behind the planting strips along their lengths, it is not envisaged that the barriers will create any adverse effect on pedestrian crossings along Road D2. On the same ground, the two noise barriers (L1EB1 and L1EB2) are considered feasible.

(xi) Maximum barrier height

For the concerned section of the Local Road L1 with nearby medium rise buildings, it is considered that the erection of tall noise barriers is not practicable. Likely adverse effect of tall noise barriers include visual impact requiring unjustifiable landscape treatment and bad illumination at night. Taking these constraints into consideration, it is considered that the maximum practicable noise barrier height along the local road would be around 3 m.

Regarding the District Distributor Roads D1 and D2, taking into consideration the relatively high future traffic flows on the roads, locations and heights of nearby developments, together with other constraints similar those described above for Road L1, it is considered that the maximum practicable noise barrier height for Roads D1 and D2 would be about 5m..

The provision of noise barriers along Roads L1 and L2 is not effective in protecting the planned clinic site because of its location near the road junctions between Roads L1 and L2 and between Roads L2 and L5, where erection of noise barriers is not feasible because of sightline constraint. The noise barrier along Road L1 has therefore been designed primarily to protect the school site (in Area 7) and the proposed nursery (one element of the area community centre site in Area 6). With the proposed noise barrier along Road L1, the residual noise impact on the clinic site would be approximately 10dB(A) above the HKPSG noise standard of 55dB(A) L10(1-hour). This level of exceedance could not be mitigated by implementation of set back distance. As a last resort, the provision of acoustic insulation and air conditioning for the future clinic in this site is therefore recommended.

With the implementation of the identified direct noise mitigation measures, the mitigated noise levels at the selected existing and future NSRs have been calculated. Except for the four proposed noise barriers to be situated at the interface of planting strips and footpaths/ cycle tracks, the other two noise barriers (i.e. D2EB1 and D2EB2) have been modelled at 0.6m from kerb of road carriageways. The surfaces of all proposed noise barriers (D2EB-1, D2EB-2, D2WB-1, D2WB-2, L1EB-1 and L1EB-2) facing the carriageway should be sound absorptive having an average sound absorption coefficient of 0.55 or above. Table 5-18 set outs the predicted noise levels at all existing and future NSRs after the incorporation of the identified direct mitigation measures into the proposed projects.

Table 5-18 Mitigated Noise Levels at the Selected Existing and Future NSRs.

NSR	Floors	Assessment Height (m)	2011 Mitigated Noise Levels, L_{10}(1-hr) dB(A)	HKPSG Noise Criteria L_{10}(1-hr) dB(A)
E1	gf/ 1st/ 2nd	8.5/ 11/ 13.5	**76/ 76/ 76**	70
E2	gf/ 1st	9.7/ 12.7	**70/ 74**	65
E3	gf/ 1st/ 2nd	9.7/ 12.2/ 14.7	**75/ 75/ 75**	70
E4	gf/ 1st	10.5/ 12.5	**69/ 71**	65
E5	gf/ 1st/ 2nd	13.2/ 15.7/ 18.2	66/ 66/ 66	70
E6	gf/ 1st/ 2nd/ 3rd/ 4th	12.4/ 15.4/ 18.4/ 21.4	52/ 52/ 52/ 52/ 52	70
E7	gf/ 1st/ 2nd	7.9/ 10.4/ 12.9	69/ 70/ 70	70
E8	gf	9.7	66	70
E9	gf	11.0	**70**	65
E10	gf	11.0	65	70
E11	1st/ 2nd/ 3rd	17.4/ 20.4/ 23.4	68/ 69/ 69	70
E12	1st/ 2nd/ 3rd	16.9/ 19.9/ 22.9	69/ 70/ 70	70
E13	1st/ 2nd/ 3rd	17.2/ 20.2/ 23.2	67/ 70/ 69	70
E14	gf/ 1st	17.2/ 20.2	60/ 60	65
E15	1st/ 2nd/ 3rd	23.7/ 26.7/ 29.7	46/ 46/ 46	70
E16	gf/ 1st	12.2/ 14.7	**78/ 78**	70
E17	gf	12.6	**81**	70
E18	gf	12.4	**76**	70
E19	gf	12.4	**78**	70
F1	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.6/ 18.6/ 21.6/ 24.6/ 27.6/ 30.6	**80/ 80/ 79/ 79/ 78/ 77**	70
F2	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	14.3/ 17.3/ 20.3/ 23.3/ 26.3/ 29.3	**80/ 80/ 79/ 78/ 78/ 77**	70
F3	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	13.7/ 16.7/ 19.7/ 22.7/ 25.7/ 28.7	66/ 66/ 66/ 65/ 65/ 65	70
F4	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	13.7/ 16.7/ 19.7/ 22.7/ 25.7/ 28.7	65/ 65/ 65/ 65/ 65/ 65	70
F5	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 20th	14.3/ 20.3/ 26.3/ 32.3/ 41.3/ 56.3/ 71.3	67/ 66/ 65/ 64/ 63/ 62/ 60	70
F6	1st/ 3rd/ 5th/ 7th/ 9th/ 11th	14.2/ 20.2/ 26.2/ 32.2/ 38.2/ 44.2	69/ 69/ 68/ 68/ 67/ 66	70
F7	1st/ 2nd/ 3rd/ 4th	16.1/ 19.1/ 22.1/ 25.1	65/ 65/ 65/ 65	70
F8	1st/ 2nd/ 3rd/ 4th	11.4/ 14.4/ 17.4/ 20.4	58/ 58/ 58/ 58	70
F9	1st/ 2nd/ 3rd/ 4th/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 15.2/ 18.2/ 21.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	60/ 63/ 65/ 69/ **72/ 73/ 72/ 71/ 71/ 71/** 70/ 70	70
F10	1st/ 2nd/ 3rd/ 4th/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 15.2/ 18.2/ 21.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	65/ 66/ 67/ 69/ 70/ **73/ 73/ 71/ 71/ 71/ 71/** 70	70
F11	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	67/ 67/ 67/ 66/ 65/ 64/ 63/ 63/ 63/ 63	70
F12	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	70/ 69/ 69/ 68/ 67/ 66/ 66/ 66/ 65/ 65	70
F13	gf/ 1st/ 2nd	7.7/ 10.2/12.7	63/ 65/ 69	70
F14	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	11.6/ 14.6/ 17.6/ 20.6/ 23.6/ 26.6	64/ 66/ 69/ **73/ 73/ 73**	70
F15	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	12.4/ 15.4/ 18.4/ 21.4/ 24.4/ 27.4	70/ 69/ 69/ 69/ 68/ 68	70
F16	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.8/ 18.8/ 21.8/ 24.8/ 27.8/ 30.8	**78/ 78/ 77/ 77/ 77/ 76/ 76**	70
F17	1st/ 2nd	15.4/ 18.4	**79/ 79/ 78**	70
F18	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	10.0/ 13.0/ 16.0/ 19.0/ 22.0/ 25.0/ 28.0	60/ 61/ 62/ 64/ **66/ 67/ 68**	65
F19	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th	10.5/ 13.5/ 16.5/ 19.5/ 22.5/ 25.5	62/ 63/ 64/ 65/ **67/ 68**	65
F20	gf/ 1st/ 2nd/ 3rd	10.9/ 13.9/ 16.9/ 19.9	**67/ 67/ 67/ 68**	55
F21	1st/ 3rd/ 5th/ 7th/ 9th/ 11th	14.6/ 20.6/ 26.6/ 32.6/ 38.6/ 44.6	64/ 64/ 63/ 63/ 62/ 61	70
F22	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 20th	14.8/ 20.8/ 26.8/ 32.8/ 41.8/ 56.8/ 71.8	70/ 70/ 70/ 69/ 68/ 66/ 65	70

It can be seem that after the implementation of all identified practicable direct noise mitigation measures, there will still be residual noise impacts at some existing and future NSRs exceeding the HKPSG noise standards. Since all identified practicable direct technical remedies have been exhausted, the residual noise impacts at the affected existing NSRs have to be tested for eligibility for indirect measures in form of acoustic insulation as a "last-resort". For the future NSRs or potentially affected sensitive land uses at which the predicted noise levels will still be exceeding the HKPSG noise criteria after the implementation of all identified direct measures, the "constraints" in terms of the need to provide receiver mitigation measures have been identified.

5.3.8 Eligibility for Noise Insulation

It can be seem in Table 5-18 that even after the incorporation of all practicable direct noise mitigation measures, there will still be residual noise impact predicted at most of the selected representative existing NSRs.

Indirect technical remedies in the form of noise insulation and provision of air conditioners for existing residential premises affected by "new" roads should be considered on the merits of the case and presented to the ExCo for consideration. In order to assess the number of dwelling that could be qualified for consideration of noise insulation and provision of air conditioners, the mitigated noise levels at the affected NSRs have been compared with the three noise insulation criteria set out in Section 5.3.2. These are presented overleaf in Table 5-19. It is found that no dwellings will meet the eligibility criteria for insulation after the implementation of the identified direct noise mitigation measures.

Existing educational premises that will still be affected by the proposed projects after the implementation of the identified practicable mitigation measures should be provided with indirect technical remedies in the form of noise insulation and provision of air conditioners to redress the residual impacts. From the assessment results given in Table 5-19, it is found that the existing kindergarten (NSR E9) situated near the junction of Roads L1 and L2 will be the only existing NSR qualified for noise insulation and provision of air conditioners.

5.3.9 Constraints on Future Sensitive Land Uses

The mitigated noise levels predicted at the selected future NSRs given in Table 5-18 indicated that after the implementation of all identified practicable direct noise mitigation measures, there will still be residual noise impacts at some future NSRs. These affected future NSRs are located along Roads D1, D2 and L1. In order to satisfy the HKPSG traffic noise standards, there will be constraints on these planned noise sensitive developments or potentially affected noise sensitive land use zoning. These are specified below in Table 5-20.

As discussed in Section 5.3.7, the provision of practicable direct and receiver mitigation measures would unlikely be sufficient to alleviate the noise impact at the proposed clinic in Area 8 to acceptable level. As a "last resort", it is recommended that noise insulation shall be provided at the affected clinic.

Table 5-19 Eligibility for Noise Insulation at existing NSRs

NSR[a]	**Floor**	**Predicted Noise Level dB(A)**				**Indirect technical remedies eligibility test**			
		Prevailing	**Future (2011)**			**(1)**	**(2)**	**(3)**	**(4)**
		Total	**Existing Roads**	**New Roads**	**Total**	**[predicted overall noise level > specified noise level] ?**	**[predicted overall noise level - prevailing traffic noise level >1.0 dB(A)] ?**	**[noise contribution from new roads > 1 dB(A)] ?**	**Eligible ? Yes/ No**
E1	gf	69	76	negligible [c]	76	yes [76>70]	yes [76-69>1.0]	no. [0.0<1.0]	No
	1st	69	76	negligible [c]	76	yes [76>70]	yes [76-69>1.0]	no. [0.0<1.0]	No
	2 nd	69	76	negligible [c]	76	yes [76>70]	yes [76-69>1.0]	no. [0.0<1.0]	No
E2	gf	63	70	negligible [c]	70	yes [70>65]	yes [70-63>1.0]	no [0.0 <1.0]	No
	1st	67	74	negligible [c]	74	yes [74>65]	yes [74-67>1.0]	no [0.0 <1.0]	No
E3	gf	68	75	negligible [c]	75	yes [75>70]	yes [75-68>1.0]	no [0.0<1.0]	No
	1st	68	75	negligible [c]	75	yes [75>70]	yes [75-68>1.0]	no [0.0 <1.0]	No
	2 nd	68	75	negligible [c]	75	yes [75>70]	yes [75-68>1.0]	no [0.0 <1.0]	No
E4	gf	60	69	negligible [c]	69	yes [69>65]	yes [69-60>1.0]	no [0.0 <1.0]	No
	1st	63	71	negligible [c]	71	yes [71>65]	yes [71-63>1.0]	no [0.0 <1.0]	No
E9	gf	N.A.	negligible [b]	70	70	yes [70>65]	yes [70-0.0>1.0]	yes [70 >1.0]	Yes
E16	gf	70	78	negligible [c]	78	yes [78>70]	yes [78-70>1.0]	no [0.0 <1.0]	No
	1st	70	78	negligible [c]	78	yes [78>70]	yes [78-70>1.0]	no [0.0 <1.0]	No
E17	gf	74	81	negligible [c]	81	yes [81>70]	yes [81-74>1.0]	no [0.0 <1.0]	No
E18	gf	70	76	negligible [c]	76	yes [76>70]	yes [76-70>1.0]	no [0.0 <1.0]	No
E19	gf	70	78	negligible [c]	78	yes [78>70]	yes [78-70>1.0]	no [0.0 <1.0]	No

N.A. - Not applicable.

[a] Existing NSR with mitigated noise level exceeding HKPSG noise standards.

[b] All existing roads are situated at significant distance away from the NSR E9.

[c] As the number of lanes, road alignment as well as the speed limit will remained unchanged on the widened Tin Ha Road, and the proposed widening works simply involve bringing the existing road to meet current road standards, the widened Tin Ha Road (Road D1) is not considered as a new road. Thus, for NSRs E1 to E4 and E16 to E19, as the dominant noise source will originate from the widened Tin Ha Road and all proposed new roads will be situated at significant distances from the NSRs, noise impacts from the new roads are predicted to be negligible.

*Table 5-20 Constraints on Future Noise Sensitive Land Uses**

Selected Representative Future NSRs	**Designated Land Use**	**Representative Floors**	**Assessment Height (mPD)**	**Constraints on Future Noise Sensitive Land Uses**	**Mitigated Noise Levels L_{10}(1-hr) dB(A)**
Future Noise Sensitive Land Uses situated along Road D1					
F1	Residential developments "R(B)2"	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.6/ 18.6/ 21.6/ 24.6/ 27.6/ 30.6	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) the erection of a 4m high solid fence wall at the lot boundary facing Road D1 and (ii) a setback distance of 19m from the lot boundary facing the same road.	64/ 65/ 66/ 67/ 69/ 70 [after incorporation of noise mitigation measures (i) and (ii)]
F2	Residential developments "R(B)2"	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	14.3/ 17.3/ 20.3/ 23.3/ 26.3/ 29.3	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) the erection of a 4m high solid fence wall at the lot boundary facing Road D1 and (ii) a setback distance of 15m from the lot boundary facing the same road.	68/ 69/ 69/ 69/ 69/ 70 [after incorporation of noise mitigation measures (i) and (ii)]
F16	Residential developments "R(B)2"	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	15.8/ 18.8/ 21.8/ 24.8/ 27.8/ 30.8	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) the erection of a 4m high solid fence wall at the lot boundary facing Road D1 and (ii) a setback distance of 30m from the lot boundary facing the same road.	68/ 68/ 68/ 68/ 69/ 70 [after incorporation of noise mitigation measures (i) and (ii)]
F17	Residential developments "R(C)"	1st/ 2nd	15.4/ 18.4	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) the erection of a 4m high solid fence wall at the lot boundary facing Road D1 and (ii) a setback distance of 18m from the lot boundary facing the same road.	68/ 70 [after incorporation of noise mitigation measures (i) and (ii)]

* Constraints on Future Noise Sensitive Land Uses are restricted to those stated under Column 5 of the Table.

Note 1 : Examples of noise mitigation measures that can be used at NSRs include, where appropriate, building design and orientation, use of extended podium, setback of buildings, and erection of solid fence wall at site boundary, etc.

Table 5-20 (Continued) *Constraints on Future Noise Sensitive Land Uses**

Future Noise Sensitive Land Uses situated along Road D2					
F9	HKHS Housing Estate "R(A)3"	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) a setback distance of 23m from the lot boundary facing Road D2.	59/ 60/ 62/ 66/ 70/ 70/ 70/ 70/ 69/ 69 [after incorporation of noise mitigation measures (i)]
F10	HKHS Housing Estate "R(A)3"	1st/ 3rd/ 5th/ 7th/ 10th/ 15th/ 16th/ 17th/ 18th/ 19th	12.2/ 18.2/ 24.2/ 30.2/ 39.2/ 54.2/ 57.2/ 60.2/ 63.2/ 66.2	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) a setback distance of 23m from the lot boundary facing Road D2.	64/ 64/ 65/ 67/ 70/ 70/ 70/ 70/ 70/ 70 [after incorporation of noise mitigation measures (i)]
F14	Residential developments "R(B)2"	1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	11.6/ 14.6/ 17.6/ 20.6/ 23.6/ 26.6	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) a setback distance of 16m from the lot boundary facing Road D2.	67/ 67/ 67/ 67/ 68/ 69 [after incorporation of noise mitigation measures (i)]
Future Noise Sensitive Land Uses situated along Road L1					
F18	School "E"	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th/ 6th	10.0/ 13.0/ 16.0/ 19.0/ 22.0/ 25.0/ 28.0	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) a setback distance of 22m from the lot boundary facing Road L1.	60/ 60/ 61/ 62/ 63/ 64/ 65 [after incorporation of noise mitigation measures (i)]
F19	Nursery (within area community centre) "G/IC"	gf/ 1st/ 2nd/ 3rd/ 4th/ 5th	10.5/ 13.5/ 16.5/ 19.5/ 22.5/ 25.5	Implementation of traffic noise mitigation measures at receivers such as a combined use of those measures listed in **note 1** to bring about a reduction in noise levels to meet the HKPSG traffic noise standards. As an indicator, the noise standards can be satisfied by (i) a setback distance of 23m from the lot boundary facing Road L1.	62/ 62/ 63/ 63/ 64/ 65 [after incorporation of noise mitigation measures (i)]
F20	Clinic "G"	gf/ 1st/ 2nd/ 3rd	10.9/ 13.9/ 16.9/ 19.9	(i) Provision of noise insulation and air conditioners as a "last resort".	N.A.

* Constraints on Future Noise Sensitive Land Uses are restricted to those stated under Column 5 of the table.

Note 1 : Examples of noise mitigation measures that can be used at NSRs include, where appropriate, building design and orientation, use of extended podium, architectural fins/ balcony, setback of buildings, and erection of solid fence wall at site boundary, etc.

5.3.10 Estimated Numbers of NSRs Exceeding Noise Standards

From the predicted 2011 traffic noise levels at the selected representative existing and future NSRs, the total number of dwellings and classrooms (for schools) that will be subject to exceedance of the HKPSG noise criteria before and after the provision of the identified direct noise mitigation measures can be estimated. These are set out below in Table 5-21 for both existing and future classrooms and dwellings. As master layout plans for future developments are not available, please note that the stated numbers for future dwellings and classrooms are only an approximate estimation.

Table 5-21 Number of NSRs exceeding the noise standards

	Approximate No. of Dwellings		**Approximate No. of Classrooms in School**	
	Existing	**Planned**	**Existing**	**Planned***
Without direct mitigation measures	45	420	4	48
With proposed direct mitigation measures	33	320	4	24
With proposed direct mitigation measures plus additional noise mitigation measures at future NSRs	N.A.	Nil	N.A.	N.A.

N.A. - Not applicable.

* Although the preliminary layout plan provided by the HKHS include a school near the north-eastern boundary in Area 13, the consultants have been advised by the HKHS that the proposed layout plan is still under preliminary planning and the school could be removed from the plan. The northern boundary of Area 13 has therefore been considered to be occupied by residential units only in the calculation.

Apart from schools and dwellings, after the implementation of all practicable direct noise mitigation measures, it has been predicted that an existing church (NSR E2) along Road D1 would still be impacted by traffic noise. There will also be constraints on the proposed nursery (one element of the area community centre) and clinic in Area 6 and 8 respectively along Road L1.

5.3.11 Financial Implications

The costs for erecting noise barriers and the provision of noise insulation for the affected existing kindergarten are estimated as follows. Details of the breakdown are given in Appendix 10.

Table 5-22 Costs for Noise Mitigation Measures

Mitigation Measure	**Costs (HK$)**
Noise Barriers	10.7 M
Noise Insulation	0.04 M

5.3.12 Conclusion

Traffic noise impacts from the proposed road scheme on existing and future NSRs have been quantitatively assessed. Predicted results showed that the noise criteria as stated in the HKPSG will be met at most of the selected existing and future NSRs, except for the existing and future ones located along Roads D1 and D2, as well as the existing kindergarten, proposed school, nursery and clinic lying along Road L1.

Practicable direct noise mitigation measures have been identified and recommended for implementation to reduce the potential traffic noise problem on both existing and future NSRs. Where an exceedance is predicted at an existing NSR, the residual noise impacts at the NSR has been tested for eligibility of indirect measures. For future NSRs that will still be subject to noise level exceeding the HKPSG noise standards after the implementation of all identified direct mitigation measures at source, constraints in terms of the need to implement additional noise mitigation measures at receivers have been identified. Possible noise mitigation measures at receivers include building design and orientation, use of extended podium, setback of buildings, and erection of solid fence wall at site boundary, etc.

6. COMMENTS ON POLLUTION CONTROL CLAUSES

6.1 Introduction

Standard pollution control clauses giving details on noise pollution control, dust suppression, etc. are provided in Appendix B of the study brief. These clauses have been reviewed and modified as shown below to suit specific site situation and constraints. The "revised" Site-specific Pollution Control Clauses is given in Appendix 9 for information.

6.2 Comments on Pollution Control Clauses

(i) The original Section 1 "Avoidance of Nuisance" becomes new Section 1 "General Specification for Environmental Protection" including regulatory requirements and general environmental control clauses.

(ii) Add after new Section 1, "Environmental Monitoring and Target Levels". This will be the new Section 2.

(iii) The old Section 2 will become Section 3 with the same title of "Noise Pollution Control". Old clauses are re-arranged and additional ones added under sub-headings of "General Specification", "Non-Statutory Control", "To Provide Sound Level Meter", "Environmental Monitoring and Auditing", "Baseline Monitoring", and "Regular Monitoring".

(iv) Sub-heading of "General Specification" shall be added before the first clause under Section 4. "Dust Suppression Measures". Additional clauses "(d)", "(j)", and "(l) to (p)" (new numbering) shall be added.

(v) Additional clauses shall be added under sub-headings of "To Provide Dust Monitoring Equipment", "Baseline Monitoring", "Regular Monitoring", and "Non-compliance Impact Monitoring".

(vi) Clauses regarding on-site cement batching facilities shall be arranged under sub-heading of "If on-site cement batching facilities exist, the following clauses shall be deemed applicable:-".

(vii) Add after the original clause 3(c) a clause regarding measures for unacceptability of plant, equipment or methods of working.

(viii) Add after the original 3(h) a clause regarding the road surface requirement within the construction site.

(ix) Add after the original clause 3(I) 2 clauses regarding furnace, boiler or other plant or equipment that might result in air pollution. Add after this 3 clauses regarding blasting, earthworks and soilworks that could result in dust generation.

(x) Add after the original clause 3(l) a clause regarding the cleaning of concrete batching plant.

(xi) While the Original Section 5. & 6. are applicable to the Hung Shiu Kiu project, the Original Section 7. & 8. shall be omitted as there will be no dredging work.

7. ASSESSMENT SUMMARY AND CONCLUSION

This EIA has assessed the potential environmental impacts associated with the construction and operation of the proposed roadworks to be carried out under two separate projects. Areas assessed include dust emission and noise impacts during the construction phase, vehicular emission and traffic noise impacts during the operation of the proposed roadworks.

7.1 Air Quality Impacts

In the absence of effective dust control measures, the construction works is expected to introduce an unacceptable dust emission impact upon the existing sensitive receivers which are scattered around the project area. With the implementation of effective control measures, the impact will be reduced to within acceptable levels. Environmental pollution control clauses are recommended which should be implemented through contract clauses. An Environmental Monitoring and Audit (EM&A) report (R718/0696) has been prepared to oversee the effectiveness of the proposed dust control measures.

The potential air quality impacts resulted from the operation of the proposed road network has been quantitatively assessed. Calculations show that with the provided buffer distances along the kerbsides of the carriageways, which range from a minimum of 1.6m for L14 to a maximum of 10m for a section of road L1, vehicular emission will not pose an unacceptable impact upon the existing and future sensitive receivers located in the area.

7.2 Noise Impacts

Noise from construction works other than percussive piling is expected to result in exceedance of the noise criteria at most of the sensitive receivers. With the use of silenced powered mechanical equipment and mobile barriers/ enclosure as mitigation measures, it is found that noise levels would still exceed the established guidelines at a number of NSRs. The period during which the noise guidelines will be exceeded has been predicted at each affected NSRs and additional noise mitigation have been proposed to further reduce the noise impacts. For the two affected educational premises, according to ProPECC PN 2/93, as a last resort, consideration should be given to provide acoustic insulation and air conditioning to these educational premises during the duration of the construction activities. Implementation of the recommended noise mitigation should be checked by EM&A procedures as detailed in the prepared EM&A report (ref.: R718/0696). Construction noise arising from percussive piling has also been assessed with the appropriate permitted hours of operation determined. A construction noise permit shall be applied from the Authority before the operation of percussive piling activities.

The Traffic Noise Impact Assessment indicated that traffic noise will not be a main concern for most of the proposed road alignments except for Roads D1 and D2 where the predicted traffic volume will be relatively high. Relatively sensitive land uses, which include an existing kindergarten, a proposed school, a nusery (one element of an area community centre) and a clinic lying along Road L1, have also been predicted to have noise levels exceeding the relevant noise standards.

Direct noise mitigation measures in the form of roadside barriers have been recommended as far as practicable for alleviating the potential noise impact on affected existing and future NSRs identified along the road carriageways. After the implementation of all practicable direct mitigation measures at source, there would still be residual traffic noise impacts on NSRs. Residual impacts at existing NSRs have been tested against the noise insulation criterion. Constraints on future NSRs have been specified.

Appendix 1

Existing Industrial Emission Impact
ISCST Result File

```
          ISCST - (DATED 90346)

          IBM-PC VERSION (2.05)
          (C) COPYRIGHT 1990, TRINITY CONSULTANTS, INC.
          SERIAL NUMBER 7303 SOLD TO EHS CONSULTANTS
          RUN BEGAN ON 04-01-96 AT 18:30:46


                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***

      CALCULATE (CONCENTRATION=1,DEPOSITION=2)                             ISW(1) =   1
      RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)              ISW(2) =   3
      DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)                     ISW(3) =   1
      TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                             ISW(4) =   1
      CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                        ISW(5) =   0
      LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)                     ISW(6) =   1

      COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
      WITH THE FOLLOWING TIME PERIODS:
        HOURLY (YES=1,NO=0)                                                ISW(7) =   1
        2-HOUR (YES=1,NO=0)                                                ISW(8) =   0
        3-HOUR (YES=1,NO=0)                                                ISW(9) =   0
        4-HOUR (YES=1,NO=0)                                               ISW(10) =   0
        6-HOUR (YES=1,NO=0)                                               ISW(11) =   0
        8-HOUR (YES=1,NO=0)                                               ISW(12) =   0
        12-HOUR (YES=1,NO=0)                                              ISW(13) =   0
        24-HOUR (YES=1,NO=0)                                              ISW(14) =   1
      PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                                 ISW(15) =   1

      PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
      SPECIFIED BY ISW(7) THROUGH ISW(14):
        DAILY TABLES (YES=1,NO=0)                                         ISW(16) =   0
        HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)                      ISW(17) =   1
        MAXIMUM 50 TABLES (YES=1,NO=0)                                    ISW(18) =   0
      METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)           ISW(19) =   1
      RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)   ISW(20) =   0
      WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)           ISW(21) =   1
      VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)    ISW(22) =   1
      SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)                   ISW(23) =   0
      PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)               ISW(24) =   2
      PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)         ISW(25) =   2
      PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)               ISW(26) =   1
      CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)             ISW(27) =   1
      REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                             ISW(28) =   2
      TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)                    ISW(29) =   1
      DEBUG OPTION CHOSEN (YES=1,NO=2)                                    ISW(30) =   2
      ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)                 ISW(31) =   1

      NUMBER OF INPUT SOURCES                                              NSOURC =  18
      NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                             NGROUP =   0
      TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)                 IPERD =   0
      NUMBER OF X (RANGE) GRID VALUES                                      NXPNTS =  31
      NUMBER OF Y (THETA) GRID VALUES                                      NYPNTS =  31
      NUMBER OF DISCRETE RECEPTORS                                         NXWYPT =   0
      SOURCE EMISSION RATE UNITS CONVERSION FACTOR                             TK =.10000E+07
      HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED                     ZR =  10.00  METERS
      LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA                             IMET =   9
      DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION                  DECAY = .000000E+00
      SURFACE STATION NO.                                                     ISS = 92001
      YEAR OF SURFACE DATA                                                    ISY = 94
      UPPER AIR STATION NO.                                                   IUS = 94001
      YEAR OF UPPER AIR DATA                                                  IUY = 94
      ALLOCATED DATA STORAGE                                                LIMIT = 43500 WORDS
      REQUIRED DATA STORAGE FOR THIS PROBLEM RUN                            MIMIT = 19643 WORDS

                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***

                                *** METEOROLOGICAL DAYS TO BE PROCESSED ***
                                                 (IF=1)

   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

                      *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                               (METERS/SEC)

                                     1.54,    3.09,    5.14,    8.23,   10.80,
```

```
                              *** WIND PROFILE EXPONENTS ***

  STABILITY                          WIND SPEED CATEGORY
  CATEGORY         1              2              3              4              5              6
     A        .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01
     B        .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01     .70000E-01
     C        .10000E+00     .10000E+00     .10000E+00     .10000E+00     .10000E+00     .10000E+00
     D        .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00
     E        .35000E+00     .35000E+00     .35000E+00     .35000E+00     .35000E+00     .35000E+00
     F        .55000E+00     .55000E+00     .55000E+00     .55000E+00     .55000E+00     .55000E+00

                      *** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
                                (DEGREES KELVIN PER METER)


  STABILITY                          WIND SPEED CATEGORY
  CATEGORY         1              2              3              4              5              6
     A        .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
     B        .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
     C        .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
     D        .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
     E        .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01
     F        .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01

                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                      *** X-COORDINATES OF RECTANGULAR GRID SYSTEM ***
                                         (METERS)

817000.0, 817050.0, 817100.0, 817150.0, 817200.0, 817250.0, 817300.0, 817350.0, 817400.0, 817450.0,
817500.0, 817550.0, 817600.0, 817650.0, 817700.0, 817750.0, 817800.0, 817850.0, 817900.0, 817950.0,
818000.0, 818050.0, 818100.0, 818150.0, 818200.0, 818250.0, 818300.0, 818350.0, 818400.0, 818450.0,
818500.0,


                      *** Y-COORDINATES OF RECTANGULAR GRID SYSTEM ***
                                         (METERS)

832000.0, 832050.0, 832100.0, 832150.0, 832200.0, 832250.0, 832300.0, 832350.0, 832400.0, 832450.0,
832500.0, 832550.0, 832600.0, 832650.0, 832700.0, 832750.0, 832800.0, 832850.0, 832900.0, 832950.0,
833000.0, 833050.0, 833100.0, 833150.0, 833200.0, 833250.0, 833300.0, 833350.0, 833400.0, 833450.0,
833500.0,


                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                                * ELEVATION HEIGHTS IN METERS *
                                  * FOR THE RECEPTOR GRID *

 Y-AXIS   /                                        X-AXIS (METERS)
(METERS)  /     817000.0     817050.0     817100.0     817150.0     817200.0     817250.0     817300.0     817350.0     817400
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833450.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 833400.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 833350.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833300.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833250.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 833200.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 833150.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833100.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833050.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 833000.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832950.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832900.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832850.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832800.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832750.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832700.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832650.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832600.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832550.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832500.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.500
 832450.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
 832400.0 /      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50000      4.50
```

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 832350.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832300.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832250.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832200.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832150.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832100.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832050.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 832000.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500


                          *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***


                                                  * ELEVATION HEIGHTS IN METERS *
                                                     * FOR THE RECEPTOR GRID *

  Y-AXIS    /                                                    X-AXIS (METERS)
 (METERS)   /   817450.0    817500.0    817550.0    817600.0    817650.0    817700.0    817750.0    817800.0    817850
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 833450.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833400.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833350.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833300.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833250.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833200.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833150.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833100.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833050.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833000.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832950.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832900.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832850.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832800.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832750.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832700.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832650.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832600.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832550.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832500.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832450.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832400.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832350.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832300.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832250.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832200.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832150.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832100.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832050.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832000.0 /     5.00000     5.00000     5.00000     5.00000      .00000     6.00000    10.00000    70.00000    70.000


                          *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***


                                                  * ELEVATION HEIGHTS IN METERS *
                                                     * FOR THE RECEPTOR GRID *

  Y-AXIS    /                                                    X-AXIS (METERS)
 (METERS)   /   817900.0    817950.0    818000.0    818050.0    818100.0    818150.0    818200.0    818250.0    818300
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.50000     4.500
 833450.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833400.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833350.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833300.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833250.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833200.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833150.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833100.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833050.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 833000.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832950.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832900.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832850.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832800.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832750.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832700.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832650.0 /      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
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 832600.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832550.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832500.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832450.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832400.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832350.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832300.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832250.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832200.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832150.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .000
 832100.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832050.0 /       .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00000      .00
 832000.0 /     20.00000    10.00000     5.00000    15.00000   100.00000   120.00000   100.00000    25.00000    42.00


                         *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***


                                       * ELEVATION HEIGHTS IN METERS *
                                         * FOR THE RECEPTOR GRID *

  Y-AXIS    /                                              X-AXIS (METERS)
 (METERS)   /     818350.0    818400.0    818450.0    818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      4.50000     4.50000     4.50000     4.50000
 833450.0 /       .00000      .00000      .00000      .00000
 833400.0 /       .00000      .00000      .00000      .00000
 833350.0 /       .00000      .00000      .00000      .00000
 833300.0 /       .00000      .00000      .00000      .00000
 833250.0 /       .00000      .00000      .00000      .00000
 833200.0 /       .00000      .00000      .00000      .00000
 833150.0 /       .00000      .00000      .00000      .00000
 833100.0 /       .00000      .00000      .00000      .00000
 833050.0 /       .00000      .00000      .00000      .00000
 833000.0 /       .00000      .00000      .00000      .00000
 832950.0 /       .00000      .00000      .00000      .00000
 832900.0 /       .00000      .00000      .00000      .00000
 832850.0 /       .00000      .00000      .00000      .00000
 832800.0 /       .00000      .00000      .00000      .00000
 832750.0 /       .00000      .00000      .00000      .00000
 832700.0 /       .00000      .00000      .00000      .00000
 832650.0 /       .00000      .00000      .00000      .00000
 832600.0 /       .00000      .00000      .00000      .00000
 832550.0 /       .00000      .00000      .00000      .00000
 832500.0 /       .00000      .00000      .00000      .00000
 832450.0 /       .00000      .00000      .00000      .00000
 832400.0 /       .00000      .00000      .00000      .00000
 832350.0 /       .00000      .00000      .00000      .00000
 832300.0 /       .00000      .00000      .00000      .00000
 832250.0 /       .00000      .00000      .00000      .00000
 832200.0 /       .00000      .00000      .00000      .00000
 832150.0 /       .00000      .00000      .00000      .00000
 832100.0 /       .00000      .00000      .00000      .00000
 832050.0 /       .00000      .00000      .00000      .00000
 832000.0 /     20.00000   133.70000   133.70000   160.00000


                         *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***


                                  * ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
                                         * FOR THE RECEPTOR GRID *

  Y-AXIS    /                                              X-AXIS (METERS)
 (METERS)   /     817000.0    817050.0    817100.0    817150.0    817200.0    817250.0    817300.0    817350.0    81740
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 833450.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 833400.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 833350.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 833300.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 833250.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 833200.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 833150.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 833100.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 833050.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 833000.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
 832950.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
 832900.0 /      1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50
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   832850.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832800.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832750.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832700.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832650.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832600.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832550.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832500.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832450.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832400.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832350.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832300.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832250.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832200.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832150.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832100.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832050.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832000.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500


                             *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                            ***


                                                 * ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
                                                         * FOR THE RECEPTOR GRID *

   Y-AXIS   /                                                 X-AXIS (METERS)
  (METERS)  /    817450.0    817500.0    817550.0    817600.0    817650.0    817700.0    817750.0    817800.0    817850
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

   833500.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833450.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833400.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833350.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833300.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833250.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833200.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833150.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833100.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833050.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833000.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832950.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832900.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832850.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832800.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832750.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832700.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832650.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832600.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832550.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832500.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832450.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832400.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832350.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832300.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832250.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832200.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832150.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832100.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832050.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   832000.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500


                             *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                            ***


                                                 * ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
                                                         * FOR THE RECEPTOR GRID *

   Y-AXIS   /                                                 X-AXIS (METERS)
  (METERS)  /    817900.0    817950.0    818000.0    818050.0    818100.0    818150.0    818200.0    818250.0    818300
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

   833500.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833450.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833400.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833350.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833300.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833250.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833200.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
   833150.0 /     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.50000     1.500
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  833100.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  833050.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  833000.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832950.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832900.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832850.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832800.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832750.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832700.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832650.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832600.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832550.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832500.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832450.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832400.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832350.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832300.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832250.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832200.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500
  832150.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832100.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832050.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50
  832000.0 /      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.50000      1.500


                               *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***


                                           * ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
                                                    * FOR THE RECEPTOR GRID *

  Y-AXIS    /                                                       X-AXIS (METERS)
 (METERS)   /     818350.0     818400.0     818450.0     818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /      1.50000      1.50000      1.50000      1.50000
  833450.0 /      1.50000      1.50000      1.50000      1.50000
  833400.0 /      1.50000      1.50000      1.50000      1.50000
  833350.0 /      1.50000      1.50000      1.50000      1.50000
  833300.0 /      1.50000      1.50000      1.50000      1.50000
  833250.0 /      1.50000      1.50000      1.50000      1.50000
  833200.0 /      1.50000      1.50000      1.50000      1.50000
  833150.0 /      1.50000      1.50000      1.50000      1.50000
  833100.0 /      1.50000      1.50000      1.50000      1.50000
  833050.0 /      1.50000      1.50000      1.50000      1.50000
  833000.0 /      1.50000      1.50000      1.50000      1.50000
  832950.0 /      1.50000      1.50000      1.50000      1.50000
  832900.0 /      1.50000      1.50000      1.50000      1.50000
  832850.0 /      1.50000      1.50000      1.50000      1.50000
  832800.0 /      1.50000      1.50000      1.50000      1.50000
  832750.0 /      1.50000      1.50000      1.50000      1.50000
  832700.0 /      1.50000      1.50000      1.50000      1.50000
  832650.0 /      1.50000      1.50000      1.50000      1.50000
  832600.0 /      1.50000      1.50000      1.50000      1.50000
  832550.0 /      1.50000      1.50000      1.50000      1.50000
  832500.0 /      1.50000      1.50000      1.50000      1.50000
  832450.0 /      1.50000      1.50000      1.50000      1.50000
  832400.0 /      1.50000      1.50000      1.50000      1.50000
  832350.0 /      1.50000      1.50000      1.50000      1.50000
  832300.0 /      1.50000      1.50000      1.50000      1.50000
  832250.0 /      1.50000      1.50000      1.50000      1.50000
  832200.0 /      1.50000      1.50000      1.50000      1.50000
  832150.0 /      1.50000      1.50000      1.50000      1.50000
  832100.0 /      1.50000      1.50000      1.50000      1.50000
  832050.0 /      1.50000      1.50000      1.50000      1.50000
  832000.0 /      1.50000      1.50000      1.50000      1.50000

                               *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***

                                                      *** SOURCE DATA ***

                          EMISSION RATE                                                TEMP.    EXIT VEL.
                             TYPE=0,1                                                 TYPE=0     TYPE=0
          T W              (GRAMS/SEC)                                               (DEG.K);   (M/SEC);             BLDG.      BLDG.      BLDG.
          Y A  NUMBER        TYPE=2                                  BASE            VERT.DIM   HORZ.DIM DIAMETER   HEIGHT     LENGTH     WIDTH
  SOURCE  P K   PART.     (GRAMS/SEC)       X          Y            ELEV.    HEIGHT   TYPE=1    TYPE=1,2   TYPE=0    TYPE=0     TYPE=0     TYPE=0
  NUMBER  E E   CATS.   *PER METER**2  (METERS)   (METERS)    (METERS)  (METERS)  (METERS)   (METERS)  (METERS)  (METERS)  (METERS)  (METERS)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

       1  0 0     0      .99000E-01  818138.0  832412.0        .0      19.80    273.15       9.00      .23       .00        .00        .00
       2  0 0     0      .40000E-02  818062.0  832338.0        .0      11.10    273.15       9.00      .24       .00        .00        .00
       3  0 0     0      .11000E-01  818078.0  832338.0        .0       9.40    273.15       9.00      .27       .00        .00        .00
       4  0 0     0      .40000E-02  818050.0  832322.0        .0      11.10    273.15       9.00      .20       .00        .00        .00
```

```
     5  0 0     0    .40000E-02  818036.0  832304.0      .0     11.10    273.15      9.00      .31      .00      .00      .00
     6  0 0     0    .90000E-02  818028.0  832300.0      .0     12.00    273.15      9.00      .24      .00      .00      .00
     7  0 0     0    .21000E-01  818026.0  832296.0      .0     14.90    273.15      9.00      .34      .00      .00      .00
     8  0 0     0    .11000E-01  818036.0  832298.0      .0     11.10    273.15      9.00      .27      .00      .00      .00
     9  0 0     0    .11000E-01  818034.0  832296.0      .0     11.10    273.15      9.00      .27      .00      .00      .00
    10  0 0     0    .11000E-01  818034.0  832292.0      .0     11.10    273.15      9.00      .27      .00      .00      .00
    11  0 0     0    .38300E+00  818170.0  832374.0      .0     24.40    461.15      9.00      .56      .00      .00      .00
    12  0 0     0    .97000E-01  818170.0  832350.0      .0     24.80    453.15      9.00      .69      .00      .00      .00
    13  0 0     0    .55000E-01  818001.0  832200.0      .0     15.70    273.15      9.00      .31      .00      .00      .00
    14  0 0     0    .78000E-01  817426.0  832256.0      .0     14.40    273.15      9.00      .38      .00      .00      .00
    15  0 0     0    .10410E+01  818235.0  833345.0      .0     21.10    273.15      9.00      .61      .00      .00      .00
    16  0 0     0    .38400E+00  818095.0  833608.0      .0     24.60    439.15      9.00      .35      .00      .00      .00
    17  0 0     0    .37100E+00  818096.0  833610.0      .0     24.60    439.15      9.00      .35      .00      .00      .00
    18  0 0     0    .53000E+00  818785.0  832900.0      .0     26.80    461.15      9.00      .71      .00      .00      .00

                                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                         ***

                                    * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


SOURCE NO. =     1
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .10000E+01     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .10000E+01    20   .10000E+01    21   .10000E+01    22   .10000E+01    23   .00000E+00    24   .00000E+00

SOURCE NO. =     2
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

SOURCE NO. =     3
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

SOURCE NO. =     4
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

SOURCE NO. =     5
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

SOURCE NO. =     6
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

                                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                         ***

                                    * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


SOURCE NO. =     7
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
     13   .10000E+01    14   .10000E+01    15   .10000E+01    16   .10000E+01    17   .10000E+01    18   .10000E+01
     19   .00000E+00    20   .00000E+00    21   .00000E+00    22   .00000E+00    23   .00000E+00    24   .00000E+00

SOURCE NO. =     8
      1   .00000E+00     2   .00000E+00     3   .00000E+00     4   .00000E+00     5   .00000E+00     6   .00000E+00
      7   .00000E+00     8   .00000E+00     9   .10000E+01    10   .10000E+01    11   .10000E+01    12   .10000E+01
```

```
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =      9
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     10
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     11
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     12
       1  .10000E+01       2  .10000E+01       3  .10000E+01       4  .10000E+01       5  .10000E+01       6  .10000E+01
       7  .10000E+01       8  .10000E+01       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .10000E+01      20  .10000E+01      21  .10000E+01      22  .10000E+01      23  .10000E+01      24  .10000E+01

                                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***

                                    * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

    HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR       HOUR    SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


SOURCE NO. =     13
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .00000E+00      17  .00000E+00      18  .00000E+00
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     14
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .10000E+01      20  .10000E+01      21  .10000E+01      22  .10000E+01      23  .10000E+01      24  .10000E+01


SOURCE NO. =     15
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     16
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .00000E+00      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     17
       1  .00000E+00       2  .00000E+00       3  .00000E+00       4  .00000E+00       5  .00000E+00       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .10000E+01      20  .00000E+00      21  .00000E+00      22  .00000E+00      23  .00000E+00      24  .00000E+00


SOURCE NO. =     18
       1  .10000E+01       2  .10000E+01       3  .10000E+01       4  .10000E+01       5  .10000E+01       6  .00000E+00
       7  .00000E+00       8  .00000E+00       9  .10000E+01      10  .10000E+01      11  .10000E+01      12  .10000E+01
      13  .10000E+01      14  .10000E+01      15  .10000E+01      16  .10000E+01      17  .10000E+01      18  .10000E+01
      19  .10000E+01      20  .10000E+01      21  .10000E+01      22  .10000E+01      23  .10000E+01      24  .10000E+01

* CALM HOURS (=1) FOR DAY    3 *  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY    6 *  0  0  0  0  0  0  0  1  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0
* CALM HOURS (=1) FOR DAY   12 *  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0  0
```

```
  * CALM HOURS (=1) FOR DAY  17 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  20 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  21 *  0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  22 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  30 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
  * CALM HOURS (=1) FOR DAY  32 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  38 *  0 0 0 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  47 *  0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  48 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 1
  * CALM HOURS (=1) FOR DAY  63 *  0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  67 *  0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  76 *  0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  87 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
  * CALM HOURS (=1) FOR DAY  89 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY  92 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  96 *  0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY  97 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 106 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
  * CALM HOURS (=1) FOR DAY 107 *  0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 108 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY 118 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
  * CALM HOURS (=1) FOR DAY 126 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 127 *  0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 128 *  0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 129 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 133 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 135 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 136 *  0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 141 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY 145 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY 146 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 147 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 156 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 162 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 164 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 165 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 170 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 171 *  0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 180 *  0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 183 *  0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 194 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
  * CALM HOURS (=1) FOR DAY 196 *  0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 197 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 198 *  0 1 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 200 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0
  * CALM HOURS (=1) FOR DAY 207 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
  * CALM HOURS (=1) FOR DAY 212 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
  * CALM HOURS (=1) FOR DAY 215 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0
  * CALM HOURS (=1) FOR DAY 219 *  0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 220 *  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 222 *  0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 223 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 226 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 234 *  0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0
  * CALM HOURS (=1) FOR DAY 244 *  0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 258 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
  * CALM HOURS (=1) FOR DAY 262 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 265 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 268 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY 269 *  0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 271 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
  * CALM HOURS-(=1) FOR DAY 275 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1
  * CALM HOURS (=1) FOR DAY 277 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
  * CALM HOURS (=1) FOR DAY 284 *  0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 304 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0
  * CALM HOURS (=1) FOR DAY 310 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
  * CALM HOURS (=1) FOR DAY 314 *  0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 317 *  0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 320 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0
  * CALM HOURS (=1) FOR DAY 327 *  0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 329 *  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
  * CALM HOURS (=1) FOR DAY 332 *  0 0 0 1 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 353 *  0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 356 *  0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
  * CALM HOURS (=1) FOR DAY 360 *  0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                    ***


                 * 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *

                                   * FROM ALL SOURCES *
                                  * FOR THE RECEPTOR GRID *
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                        * MAXIMUM VALUE EQUALS      2.82070 AND OCCURRED AT (  818100.0,  832000.0) *

 Y-AXIS   /                                                  X-AXIS (METERS)
(METERS)  /     817000.0     817050.0     817100.0     817150.0     817200.0     817250.0     817300.0     817350.0     817400
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 833500.0 /        .82613       .85638       .88836       .92496       .96676      1.01840      1.08196      1.15360      1.23
 833450.0 /        .86830       .90157       .93502       .97139      1.01268      1.06195      1.12243      1.19186      1.272
 833400.0 /        .91848       .95618       .99573      1.03614      1.08090      1.13364      1.19687      1.26756      1.350
 833350.0 /        .97169      1.01436      1.06219      1.11080      1.16164      1.21846      1.28589      1.35854      1.44
 833300.0 /       1.00377      1.04974      1.10216      1.15609      1.21259      1.27305      1.34463      1.42279      1.50
 833250.0 /       1.02402      1.07304      1.13023      1.19051      1.25423      1.32361      1.40201      1.48418      1.56
 833200.0 /       1.04371      1.09721      1.15843      1.22740      1.29677      1.36962      1.44971      1.52854      1.602
 833150.0 /       1.05902      1.11665      1.17648      1.24853      1.32114      1.39403      1.47198      1.54894      1.610
 833100.0 /       1.06914      1.12921      1.18541      1.25472      1.33029      1.40610      1.48230      1.55344      1.60
 833050.0 /       1.07323      1.13538      1.19480      1.25681      1.32963      1.40035      1.46981      1.53761      1.59
 833000.0 /       1.07221      1.12891      1.19479      1.25032      1.31346      1.37285      1.43559      1.51239      1.590
 832950.0 /       1.06743      1.11535      1.17389      1.22613      1.28377      1.34481      1.41141      1.50178      1.599
 832900.0 /       1.05996      1.10199      1.14230      1.19531      1.24849      1.32321      1.40480      1.50065      1.59
 832850.0 /       1.06074      1.09554      1.12378      1.16863      1.21765      1.29271      1.37580      1.47201      1.55
 832800.0 /       1.07483      1.10118      1.13140      1.15657      1.19858      1.25233      1.32228      1.40219      1.47
 832750.0 /       1.10498      1.12126      1.14877      1.16899      1.19725      1.22468      1.26899      1.31087      1.352
 832700.0 /       1.13520      1.14454      1.16688      1.19713      1.20635      1.21606      1.23029      1.23851      1.253
 832650.0 /       1.17852      1.18441      1.18813      1.20881      1.21920      1.21398      1.20788      1.20853      1.21
 832600.0 /       1.23198      1.24808      1.24346      1.22946      1.23501      1.21081      1.19105      1.19754      1.21
 832550.0 /       1.22229      1.29981      1.31037      1.28331      1.25232      1.24480      1.21178      1.21267      1.232
 832500.0 /       1.17989      1.25193      1.34558      1.37122      1.32856      1.29636      1.26793      1.24737      1.258
 832450.0 /       1.10904      1.18785      1.27309      1.38566      1.46458      1.40727      1.37056      1.31144      1.30
 832400.0 /       1.10413      1.12888      1.19069      1.30491      1.44987      1.60172      1.51359      1.43485      1.36
 832350.0 /       1.14261      1.18531      1.22229      1.24942      1.31009      1.46606      1.66035      1.51904      1.38
 832300.0 /       1.17941      1.22979      1.28221      1.33563      1.38684      1.41756      1.40411      1.41623      1.238
 832250.0 /       1.20711      1.26979      1.34093      1.41980      1.50203      1.57257      1.58181      1.41122      1.167
 832200.0 /       1.20500      1.27302      1.35730      1.45173      1.54523      1.64158      1.68729      1.48708      1.23
 832150.0 /       1.20918      1.27054      1.35209      1.44454      1.52820      1.61458      1.53175      1.47387      1.47
 832100.0 /       1.18274      1.24702      1.30240      1.38616      1.46115      1.42179      1.45847      1.42799      1.54
 832050.0 /       1.13170      1.18876      1.27693      1.29325      1.29016      1.33589      1.35421      1.38851      1.499
 832000.0 /       1.11084      1.16128      1.15533      1.17385      1.21413      1.25940      1.27300      1.35002      1.42
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                          *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                   ***

                              * 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)        *

                                                  * FROM ALL SOURCES *
                                                * FOR THE RECEPTOR GRID *

                        * MAXIMUM VALUE EQUALS      2.82070 AND OCCURRED AT (  818100.0,  832000.0) *

 Y-AXIS   /                                                  X-AXIS (METERS)
(METERS)  /     817450.0     817500.0     817550.0     817600.0     817650.0     817700.0     817750.0     817800.0     81785
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 833500.0 /       1.32567      1.43084      1.54862      1.67990      1.81719      1.95466      2.09060      2.21841      2.330
 833450.0 /       1.21250      1.29651      1.38837      1.48637      1.59241      1.70164      1.80350      1.86622      1.83
 833400.0 /       1.28465      1.37230      1.46957      1.57175      1.68245      1.79000      1.86421      1.87628      1.83
 833350.0 /       1.36929      1.46775      1.57570      1.68074      1.77783      1.85676      1.88937      1.90591      1.957
 833300.0 /       1.43177      1.53012      1.63176      1.72016      1.78421      1.82877      1.87402      1.95347      2.025
 833250.0 /       1.47435      1.55800      1.63867      1.69807      1.74333      1.80042      1.88924      1.97119      2.03
 833200.0 /       1.48720      1.54384      1.59842      1.65102      1.72292      1.81716      1.91013      1.98347      2.07
 833150.0 /       1.47931      1.51938      1.56922      1.64171      1.74170      1.83847      1.91698      2.01450      2.12
 833100.0 /       1.47279      1.51623      1.57570      1.65879      1.76024      1.84780      1.92661      2.00604      2.042
 833050.0 /       1.47678      1.54257      1.61709      1.69379      1.76704      1.82716      1.87951      1.89076      1.839
 833000.0 /       1.49823      1.58745      1.66135      1.70773      1.73440      1.75516      1.75836      1.72493      1.69
 832950.0 /       1.51581      1.60305      1.66296      1.68613      1.67221      1.64421      1.62610      1.62634      1.64
 832900.0 /       1.49875      1.57341      1.61662      1.62648      1.60073      1.56941      1.56383      1.59079      1.615
 832850.0 /       1.44744      1.49831      1.52504      1.54298      1.55680      1.56441      1.56361      1.56796      1.567
 832800.0 /       1.35905      1.39727      1.42445      1.46852      1.53164      1.58377      1.58905      1.55493      1.52
 832750.0 /       1.23963      1.28953      1.34623      1.41562      1.49691      1.57024      1.60267      1.57025      1.51
 832700.0 /       1.13743      1.19104      1.26907      1.36834      1.45319      1.51593      1.57133      1.59409      1.58
 832650.0 /       1.09330      1.13937      1.20616      1.29828      1.38394      1.45258      1.50742      1.58589      1.652
 832600.0 /       1.09155      1.13633      1.19434      1.25262      1.30931      1.37711      1.45287      1.54643      1.642
 832550.0 /       1.09873      1.14132      1.20417      1.24964      1.29133      1.35261      1.43616      1.50809      1.59
 832500.0 /       1.11005      1.15269      1.21065      1.24959      1.30708      1.37870      1.46411      1.56678      1.59
 832450.0 /       1.12352      1.17447      1.22792      1.28467      1.35524      1.42115      1.49485      1.58032      1.672
 832400.0 /       1.13425      1.20168      1.28204      1.38897      1.45810      1.50218      1.54836      1.60213      1.670
 832350.0 /       1.11631      1.21572      1.38236      1.45958      1.49034      1.53579      1.60052      1.66639      1.69
 832300.0 /       1.08461      1.23880      1.37909      1.42720      1.47337      1.53882      1.62253      1.71374      1.78
 832250.0 /       1.07326      1.16124      1.28473      1.37368      1.45642      1.54732      1.64569      1.74356      1.82
 832200.0 /       1.07954      1.18203      1.31388      1.42239      1.52076      1.61677      1.71322      1.79749      1.821
 832150.0 /       1.15629      1.21877      1.30090      1.39579      1.49447      1.59455      1.67330      1.69396      1.638
 832100.0 /       1.20414      1.22928      1.29455      1.37299      1.45088      1.50481      1.51707      1.50093      1.46
 832050.0 /       1.21155      1.22455      1.27343      1.32552      1.35753      1.36158      1.35395      1.33014      1.29
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  832000.0 /     1.41764     1.41853     1.41641     1.43816     1.22466     1.50134     1.69024     2.41349     2.560
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                                                                                                                365 DA
                                                                                                                SGROUP
                              *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                            ***

                                 * 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *

                                                     * FROM ALL SOURCES *
                                                  * FOR THE RECEPTOR GRID *

                            * MAXIMUM VALUE EQUALS      2.82070 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                      X-AXIS (METERS)
 (METERS)  /     817900.0    817950.0    818000.0    818050.0    818100.0    818150.0    818200.0    818250.0    818300
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  833500.0 /     2.39548     2.34145     2.31269     2.39285     2.05276     1.66775     1.31359     1.09302     1.261
  833450.0 /     1.67278     1.50659     1.38737     1.37440     1.29161      .89521      .67608      .60841      .721
  833400.0 /     1.79022     1.69780     1.54403     1.42449     1.16807      .77965      .64188      .62823      .677
  833350.0 /     1.97776     1.93540     1.85899     1.74034     1.32048      .79029      .67981      .67827      .661
  833300.0 /     2.05962     2.07362     2.06527     1.96566     1.54028      .92170      .69251      .68197      .700
  833250.0 /     2.11435     2.19029     2.26636     2.20121     1.69513     1.03805      .77014      .75454      .824
  833200.0 /     2.19913     2.30173     2.30668     2.03672     1.61218     1.18880     1.08987     1.06864     1.036
  833150.0 /     2.19705     2.17520     2.04804     1.89775     1.61615     1.34630     1.44621     1.36518     1.171
  833100.0 /     1.99361     1.92664     1.92267     1.82722     1.61219     1.52703     1.68227     1.53059     1.259
  833050.0 /     1.78541     1.82591     1.83012     1.72287     1.63232     1.66592     1.79649     1.60457     1.321
  833000.0 /     1.71489     1.75056     1.70599     1.67143     1.64605     1.73069     1.80677     1.60589     1.348
  832950.0 /     1.66872     1.64480     1.63315     1.64968     1.65323     1.74571     1.77141     1.57615     1.350
  832900.0 /     1.59784     1.56832     1.59891     1.62554     1.64640     1.71878     1.71068     1.53050     1.338
  832850.0 /     1.54038     1.53994     1.57633     1.59411     1.62474     1.66724     1.63757     1.47396     1.310
  832800.0 /     1.52273     1.54115     1.55729     1.56473     1.59780     1.61202     1.57004     1.42375     1.283
  832750.0 /     1.53255     1.55474     1.54655     1.54791     1.57471     1.56606     1.51825     1.38734     1.265
  832700.0 /     1.56650     1.57401     1.55688     1.54914     1.55822     1.52727     1.47081     1.35008     1.242
  832650.0 /     1.64818     1.60152     1.57650     1.55180     1.52468     1.47441     1.41130     1.29923     1.216
  832600.0 /     1.70429     1.66271     1.57202     1.52792     1.46382     1.40869     1.33997     1.24458     1.209
  832550.0 /     1.65454     1.65357     1.56258     1.46259     1.37904     1.32728     1.25617     1.21096     1.232
  832500.0 /     1.60102     1.55107     1.49203     1.36859     1.26272     1.22317     1.18534     1.23294     1.267
  832450.0 /     1.65851     1.58436     1.42132     1.24488     1.16775     1.16524     1.20740     1.23334     1.219
  832400.0 /     1.72474     1.62491     1.42275     1.13987     1.09699     1.26849     1.27265     1.18065     1.110
  832350.0 /     1.67763     1.61044     1.30989     1.01605     1.10892     1.26555     1.19546     1.11101     1.042
  832300.0 /     1.78676     1.61285     1.23811      .98467     1.02762     1.16961     1.13538     1.04255      .967
  832250.0 /     1.82208     1.60046     1.20102     1.05163     1.15646     1.21057     1.13401     1.03885      .945
  832200.0 /     1.69113     1.44966     1.26695     1.21507     1.20225     1.17258     1.08081      .98145      .892
  832150.0 /     1.54654     1.35802     1.34170     1.29350     1.26191     1.20866     1.08729      .96007      .867
  832100.0 /     1.37384     1.31814     1.36670     1.31355     1.27656     1.19518     1.06389      .92764      .837
  832050.0 /     1.26454     1.28056     1.34586     1.28264     1.25758     1.15897     1.01979      .89266      .796
  832000.0 /     2.33999     1.93592     1.63005     2.23552     2.82070     2.55126     2.06741     1.72270     1.455
                                                                                                                'N'-DA
                                                                                                                365 DA
                                                                                                                SGROUP
                              *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                            ***

                                 * 365-DAY AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *

                                                     * FROM ALL SOURCES *
                                                  * FOR THE RECEPTOR GRID *

                            * MAXIMUM VALUE EQUALS      2.82070 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                      X-AXIS (METERS)
 (METERS)  /     818350.0    818400.0    818450.0    818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     1.58162     2.18608     2.51684     2.45503
  833450.0 /     1.20171     1.76082     1.90682     1.78922
  833400.0 /     1.14098     1.49294     1.53971     1.45338
  833350.0 /      .85290     1.07908     1.17243     1.16938
  833300.0 /      .93488     1.17521     1.25612     1.25135
  833250.0 /      .98203     1.17295     1.27171     1.26848
  833200.0 /     1.08627     1.14182     1.19528     1.18598
  833150.0 /     1.16105     1.13423     1.12555     1.10086
  833100.0 /     1.15331     1.10242     1.06184     1.01792
  833050.0 /     1.14548     1.06193      .98857      .93937
  833000.0 /     1.17237     1.04848      .95880      .87603
  832950.0 /     1.20326     1.05527      .95147      .86071
  832900.0 /     1.22390     1.07392      .95385      .85693
  832850.0 /     1.21846     1.08460      .95147      .84962
  832800.0 /     1.20728     1.10671      .97720      .88495
  832750.0 /     1.20695     1.14089     1.02972      .94271
  832700.0 /     1.20183     1.17081     1.08677      .99680
  832650.0 /     1.20523     1.20429     1.14665     1.05732
  832600.0 /     1.22508     1.25153     1.21910     1.12634
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 832550.0 /      1.27262        1.30914        1.27269        1.15474
 832500.0 /      1.29947        1.30449        1.24279        1.09778
 832450.0 /      1.21323        1.19143        1.11554         .98251
 832400.0 /      1.07352        1.03379         .96837         .87395
 832350.0 /       .99789         .95937         .91575         .84870
 832300.0 /       .92326         .89646         .87899         .84331
 832250.0 /       .88051         .85218         .83769         .81266
 832200.0 /       .83421         .80312         .78988         .77362
 832150.0 /       .80171         .76886         .74693         .73664
 832100.0 /       .77719         .73762         .71849         .70775
 832050.0 /       .73908         .69982         .68525         .68125
 832000.0 /      1.14744        1.15429        1.12237        1.14907
                                                                                                          HIGH
                                                                                                           1-HR
                                                                                                          SGROUP
                                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***


                              * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *
                                                  * FROM ALL SOURCES *
                                                * FOR THE RECEPTOR GRID *

                           * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                X-AXIS (METERS)
 (METERS)  /            817000.0                  817050.0             817100.0                  817150.0                  817200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      38.17321 ( 15,10)      39.92944 ( 15,10)      41.54039 ( 15,10)      43.66147 (327,18)      46.99054 (327,18)
 833450.0 /      37.48014 (275, 9)      39.20499 ( 66, 9)      41.87305 ( 66, 9)      44.68080 ( 66, 9)      47.59167 ( 66, 9)
 833400.0 /      45.85413 (315,18)      46.84253 (315,18)      47.73272 (315,18)      48.48525 (315,18)      49.05101 (315,18)
 833350.0 /     104.14520 (  9, 9)     104.42090 (  9, 9)     104.36480 (  9, 9)     103.91340 (  9, 9)     102.99390 (  9, 9)
 833300.0 /      66.38816 (358, 9)      69.35278 (358, 9)      72.48091 (358, 9)      75.76212 (358, 9)      79.17938 (358, 9)
 833250.0 /      54.47207 (358, 9)      55.30251 (358, 9)      55.92818 (358, 9)      61.71476 ( 11, 9)      69.62712 ( 11, 9)
 833200.0 /      85.10477 ( 11, 9)      91.74480 ( 11, 9)      98.12964 ( 11, 9)     103.87870 ( 11, 9)     108.48490 ( 11, 9)
 833150.0 /      88.65903 ( 11, 9)      87.18233 ( 11, 9)      83.82387 ( 11, 9)      78.38566 ( 11, 9)      70.81476 ( 11, 9)
 833100.0 /      50.18764 (364,18)      53.87582 (364,18)      56.33814 (364,18)      56.99470 (364,18)      63.86174 ( 34,18)
 833050.0 /      55.62257 ( 34,18)      62.89839 ( 34,18)      68.72556 ( 34,18)      71.90221 ( 34,18)      71.20822 ( 34,18)
 833000.0 /      62.56666 ( 34,18)      60.49852 ( 34,18)      55.23354 ( 34,18)      57.07896 (360,18)      63.91756 (  2, 9)
 832950.0 /      50.31021 (360,18)      56.50925 (  2, 9)      65.32111 (  2, 9)      70.43835 (  2, 9)      69.63434 (  2, 9)
 832900.0 /      62.42155 (  2, 9)      63.44907 (  2, 9)      59.48665 (  2, 9)      50.52476 (  2, 9)      60.11477 (359,18)
 832850.0 /      50.10432 (  2, 9)      45.85842 (359,18)      58.33327 (359,18)      67.51279 (359,18)      89.06412 (314, 9)
 832800.0 /      55.78570 (359,18)      65.25509 (314, 9)      83.40054 (314, 9)      95.56908 (314, 9)      95.78909 (314, 9)
 832750.0 /      77.94515 (314, 9)      88.30740 (314, 9)      89.30000 (314, 9)      78.73985 (314, 9)      70.19868 (  8,10)
 832700.0 /      83.13639 (314, 9)      75.31067 (314, 9)      63.46759 (  8,10)      64.91503 (  8,10)      66.95891 (310, 9)
 832650.0 /      58.86308 (314, 9)      59.87760 (  8,10)      60.63278 (310, 9)      62.02729 (310, 9)      64.43862 ( 11,10)
 832600.0 /      54.53560 (  8,10)      58.53273 (310, 9)      55.77945 ( 11,10)      62.71600 ( 11,10)      64.15120 ( 11,10)
 832550.0 /      53.75293 (310, 9)      55.67320 ( 11,10)      59.71534 ( 11,10)      58.47085 ( 11,10)      51.16786 ( 11,10)
 832500.0 /      54.32310 ( 11,10)      55.94161 ( 11,10)      52.78048 ( 11,10)      44.77759 ( 11,10)      40.62011 (332, 9)
 832450.0 /      51.78118 ( 11,10)      47.33411 ( 11,10)      39.13059 ( 11,10)      39.40175 (332, 9)      43.34604 (332, 9)
 832400.0 /      42.27166 ( 11,10)      34.19653 ( 11,10)      38.02471 (332, 9)      40.74990 (332, 9)      48.08266 (348,18)
 832350.0 /      32.48355 (332, 9)      36.55985 (332, 9)      38.37374 (348,18)      46.83842 (348,18)      54.70150 (348,18)
 832300.0 /      35.05845 (332, 9)      38.36111 (348,18)      45.61249 (348,18)      52.20481 (348,18)      55.46769 (309, 9)
 832250.0 /      43.72280 (358, 9)      45.22443 (358, 9)      49.92479 (348,18)      52.80658 (309, 9)      48.40762 (348,18)
 832200.0 /      55.00638 ( 11, 9)      55.65449 ( 11, 9)      51.68365 ( 11, 9)      46.22923 (348,18)      43.30951 ( 58,15)
 832150.0 /      45.92642 (348,18)      48.02306 (309, 9)      44.20591 (348,18)      37.15103 (348,18)      34.38582 (220, 9)
 832100.0 /      45.87812 (309, 9)      42.33010 (348,18)      36.01583 (348,18)      30.27250 (315, 9)      27.71144 (269, 9)
 832050.0 /      40.59303 (348,18)      34.91178 (348,18)      28.98724 ( 37,19)      28.38257 (269, 9)      34.52600 (311, 9)
 832000.0 /      33.88072 (348,18)      27.93661 (170,22)      25.02047 (317,10)      32.25134 (348,18)      50.93917 (311, 9)
                                                                                                          HIGH
                                                                                                           1-HR
                                                                                                          SGROU
                                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***


                              * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *
                                                  * FROM ALL SOURCES *
                                                * FOR THE RECEPTOR GRID *

                           * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                X-AXIS (METERS)
 (METERS)  /            817250.0                  817300.0             817350.0                  817400.0                  817450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      50.18977 (327,18)      53.19372 (327,18)      55.49845 (327,18)      66.06142 (  7,18)      78.48655 (  7,18)
 833450.0 /      50.58102 ( 66, 9)      53.66784 ( 66, 9)      57.51927 ( 15,10)      61.53514 ( 15,10)      55.22882 ( 15,10)
 833400.0 /      49.79362 (275, 9)      53.55835 (275, 9)      57.59837 (275, 9)      61.88052 (275, 9)      56.66972 ( 71,18)
 833350.0 /     101.36760 (  9, 9)      98.66588 (  9, 9)      95.11531 (  9, 9)      90.61291 (  9, 9)      68.65823 (358, 9)
 833300.0 /      82.71930 (358, 9)      86.29924 (358, 9)      89.75420 (358, 9)      92.93678 (358, 9)      77.65128 (358, 9)
 833250.0 /      78.38215 ( 11, 9)      87.70551 ( 11, 9)      97.42465 ( 11, 9)     107.03960 ( 11, 9)      79.73957 ( 11, 9)
 833200.0 /     111.28450 ( 11, 9)     111.22480 ( 11, 9)     107.67480 ( 11, 9)      99.96072 ( 11, 9)      60.78629 ( 11, 9)
 833150.0 /      62.07582 (364,18)      66.95301 (364,18)      69.10391 (364,18)      71.41605 ( 34,18)      59.16525 ( 34,18)
 833100.0 /      73.57751 ( 34,18)      80.62408 ( 34,18)      82.67847 ( 34,18)      77.70499 ( 34,18)      65.57126 (269, 9)
 833050.0 /      65.78610 ( 34,18)      64.84069 (360,18)      71.99213 (  2, 9)      84.02763 (  2, 9)      61.89188 (  2, 9)
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 833000.0 /      74.46531 (  2, 9)     79.08243 (  2, 9)     74.38127 (  2, 9)     59.86277 (  2, 9)     57.59115 (359,18)
 832950.0 /      61.74212 (  2, 9)     60.48185 (359,18)     76.81174 (359,18)     99.20205 (314, 9)     86.45935 (314, 9)
 832900.0 /      72.43964 (359,18)     94.67455 (314, 9)    111.73340 (314, 9)    108.16450 (314, 9)     77.19467 (  8,10)
 832850.0 /     103.44910 (314, 9)    102.36230 (314, 9)     82.87878 (314, 9)     85.12324 (  8,10)     65.08875 (  8,10)
 832800.0 /      81.47459 (314, 9)     77.56464 (  8,10)     76.12553 (310, 9)     75.18427 ( 11,10)     74.90197 ( 11,10)
 832750.0 /      69.89466 (  8,10)     71.90088 (310, 9)     75.89481 ( 11,10)     81.36638 ( 11,10)     63.13653 ( 11,10)
 832700.0 /      64.27794 ( 11,10)     73.61005 ( 11,10)     73.85114 ( 11,10)     62.86824 ( 11,10)     50.43227 (332, 9)
 832650.0 /      69.40623 ( 11,10)     65.94235 ( 11,10)     53.73756 ( 11,10)     54.45129 (332, 9)     52.58912 (332, 9)
 832600.0 /      58.27045 ( 11,10)     45.85560 ( 11,10)     51.72212 (332, 9)     54.21042 (332, 9)     62.52901 (348,18)
 832550.0 /      41.58381 (332, 9)     48.88964 (332, 9)     51.72324 (348,18)     67.27330 (348,18)     65.08062 (348,18)
 832500.0 /      46.07326 (332, 9)     50.55688 (348,18)     63.70922 (348,18)     69.09376 (348,18)     54.72200 (348,18)
 832450.0 /      49.33033 (348,18)     60.43415 (348,18)     64.95789 (348,18)     58.70613 (348,18)     38.42117 (348,18)
 832400.0 /      57.43748 (348,18)     61.38181 (309, 9)     55.90400 (348,18)     42.40052 (348,18)     35.16459 (317,10)
 832350.0 /      58.32293 (309, 9)     53.24646 (348,18)     41.52392 (348,18)     35.34456 (317,10)     39.96346 (311, 9)
 832300.0 /      50.74623 (348,18)     40.51508 (348,18)     40.69310 (  9, 9)     41.86854 (  9, 9)     59.74081 (311, 9)
 832250.0 /      48.02932 (270, 9)     42.29115 (270, 9)     33.77779 (311, 9)     61.80814 (311, 9)     71.31126 (311, 9)
 832200.0 /      45.00778 ( 58,15)     33.62326 (220, 9)     52.73243 (311, 9)     77.60347 (311, 9)     70.10336 (311, 9)
 832150.0 /      31.96284 (105, 9)     45.16674 (311, 9)     71.13728 (311, 9)     81.25921 (311, 9)     58.40187 (311, 9)
 832100.0 /      39.13264 (311, 9)     67.04963 (311, 9)     77.04387 (311, 9)     72.68169 (311, 9)     42.26165 (311, 9)
 832050.0 /      59.03918 (311, 9)     81.34126 (311, 9)     73.45013 (311, 9)     56.76031 (311, 9)     42.45761 (353, 9)
 832000.0 /      89.88213 (311, 9)     72.58019 (311, 9)     61.62191 (311, 9)     42.60706 (314, 9)     49.94444 (353, 9)
                                                                                                                   HIGH
                                                                                                                    1-HR
                                                                                                                   SGROUP
                                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                               ***


                               * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                     * FROM ALL SOURCES *
                                                  * FOR THE RECEPTOR GRID *

                             * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

 Y-AXIS    /                                                 X-AXIS (METERS)
(METERS)   /           817500.0              817550.0              817600.0              817650.0              817700.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      91.34152 (  7,18)    102.88610 (  7,18)    110.27060 (  7,18)    109.68140 (  7,18)    101.32370 (  3, 9)
 833450.0 /      58.24523 ( 35,17)     61.31556 (327,18)     67.59715 (  6,17)     76.67667 (  6,17)     85.61739 (  6,17)
 833400.0 /      61.98404 ( 71,18)     67.78880 ( 71,18)     73.98219 ( 71,18)     80.32944 ( 71,18)     87.19508 ( 35,17)
 833350.0 /      69.63164 (358, 9)     69.86608 (358, 9)     73.95171 (123,18)     80.51913 (123,18)     87.31964 (123,18)
 833300.0 /      77.44769 (358, 9)     76.00304 (358, 9)     72.95121 (358, 9)     78.99385 (214,18)     85.24006 (214,18)
 833250.0 /      81.14822 ( 11, 9)     79.32898 ( 11, 9)     73.26311 ( 11, 9)     76.86343 ( 38,13)     80.56306 ( 38,13)
 833200.0 /      57.08556 (360,17)     61.07643 (360,17)     67.99430 ( 58,15)     77.25133 ( 58,15)     84.90576 ( 58,15)
 833150.0 /      62.02561 ( 34,18)     69.06527 (269, 9)     73.74049 (269, 9)     70.92673 ( 48,15)     80.51345 (220, 9)
 833100.0 /      64.23365 (269, 9)     60.69955 (  2, 9)     67.25606 (220, 9)     70.16792 (220, 9)     76.97878 (278, 9)
 833050.0 /      54.96278 (220, 9)     58.37798 (349,10)     64.02869 (278, 9)     75.27574 (314, 9)     81.86824 (315, 9)
 833000.0 /      70.62807 (314, 9)     83.76605 (314, 9)     82.68014 (315, 9)     83.08936 (  8,10)     74.55026 ( 59, 9)
 832950.0 /      78.94964 (314, 9)     82.28010 (  8,10)     74.69387 (  8,10)     81.47154 ( 11,10)     78.52923 ( 11,10)
 832900.0 /      76.17154 (  8,10)     71.85188 ( 11,10)     82.72899 ( 11,10)     71.38988 ( 11,10)     69.10456 (332, 9)
 832850.0 /      75.80680 ( 11,10)     78.45984 ( 11,10)     62.38605 ( 11,10)     67.72025 (332, 9)     71.40874 (348,18)
 832800.0 /      71.31501 ( 11,10)     53.34936 ( 11,10)     64.69493 (332, 9)     71.45918 (348,18)     81.69976 (348,18)
 832750.0 /      51.49708 (332, 9)     60.84662 (332, 9)     70.15744 (348,18)     79.32687 (348,18)     60.80415 (348,18)
 832700.0 /      56.68849 (332, 9)     68.02048 (348,18)     76.14425 (348,18)     61.07694 (348,18)     52.50757 (317,10)
 832650.0 /      65.39192 (348,18)     72.55465 (348,18)     60.28624 (348,18)     48.05845 (104,18)     59.21013 (311, 9)
 832600.0 /      68.75792 (348,18)     58.77559 (348,18)     45.23638 (104,18)     48.91045 (311, 9)     84.62320 (311, 9)
 832550.0 /      56.81648 (348,18)     42.33242 (104,18)     43.64085 (317,10)     77.44595 (311, 9)     81.08055 (311, 9)
 832500.0 /      39.51825 (104,18)     40.82169 (317,10)     67.52291 (311, 9)     84.53131 (311, 9)     56.70765 (311, 9)
 832450.0 /      37.93884 (317,10)     57.33538 (311, 9)     82.00008 (311, 9)     68.56477 (311, 9)     54.84980 (353, 9)
 832400.0 /      47.99458 (311, 9)     75.93029 (311, 9)     75.43754 (311, 9)     45.24592 (353, 9)     63.22182 (353, 9)
 832350.0 /      68.08134 (311, 9)     77.49825 (311, 9)     55.30649 (311, 9)     54.53159 (353, 9)     65.20012 (353, 9)
 832300.0 /      75.71748 (311, 9)     63.71863 (311, 9)     46.75344 (353, 9)     59.86162 (353, 9)     61.21251 (353, 9)
 832250.0 /      68.58147 (311, 9)     43.78217 (311, 9)     53.27417 (353, 9)     60.22670 (353, 9)     55.04340 ( 42, 9)
 832200.0 /      52.26603 (311, 9)     47.08786 (353, 9)     56.42717 (353, 9)     56.17131 (353, 9)     54.69999 ( 42, 9)
 832150.0 /      42.10582 (353, 9)     51.49277 (353, 9)     55.74165 (353, 9)     52.79703 ( 42, 9)     53.40125 ( 42, 9)
 832100.0 /      46.62589 (353, 9)     53.10409 (353, 9)     51.74818 (353, 9)     52.40553 ( 42, 9)     51.29826 ( 42, 9)
 832050.0 /      49.44628 (353, 9)     51.74159 (353, 9)     50.70461 ( 42, 9)     51.25688 ( 42, 9)     51.32998 (309,10)
 832000.0 /      54.76083 (353, 9)     52.55001 (353, 9)     57.16648 ( 11,10)     49.45759 ( 42, 9)     60.59886 (332, 9)
                                                                                                                   HIGH
                                                                                                                    1-HR
                                                                                                                   SGROUP
                                *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                               ***


                               * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                     * FROM ALL SOURCES *
                                                  * FOR THE RECEPTOR GRID *

                             * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

 Y-AXIS    /                                                 X-AXIS (METERS)
(METERS)   /           817750.0              817800.0              817850.0              817900.0              817950.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     109.05070 (  3, 9)     97.53427 (342,12)     99.34386 (208,18)    122.11800 (  2,17)    139.32970 (161,18)
```

```
   833450.0 /      92.82912 (  6,17)     98.15924 (  9,16)    101.71670 (342,12)     99.34693 (342,12)     96.96996 (248,14)
   833400.0 /      93.47961 ( 35,17)     97.49561 ( 35,17)     96.83939 ( 35,17)     92.35488 (  6,17)     95.66190 (259,12)
   833350.0 /      93.90553 (123,18)     99.40966 (123,18)    102.26250 (123,18)     99.84527 (123,18)     96.85567 (251,17)
   833300.0 /      90.67371 (214,18)     94.05123 (214,18)     99.52322 ( 38,13)    100.03060 ( 38,13)     96.41351 (194,14)
   833250.0 /      81.41224 ( 38,13)     90.24986 ( 58,15)    100.46600 ( 58,15)    101.19170 ( 48,15)     94.29044 (126,16)
   833200.0 /      90.91988 ( 48,15)     90.33936 ( 48,15)    100.34170 (220, 9)     94.99596 (220, 9)     96.65401 (278, 9)
   833150.0 /      86.97901 (220, 9)     89.98569 (278, 9)     97.98513 (278, 9)    101.52120 (105, 9)     90.15661 ( 52,10)
   833100.0 /      84.36998 (278, 9)     89.35098 (105, 9)     94.87326 (105, 9)     90.99799 ( 42,11)    101.75200 (236, 9)
   833050.0 /      83.01803 (105, 9)     78.40160 (105, 9)     90.16818 ( 42,11)     97.99239 ( 52,17)    100.58320 (277, 9)
   833000.0 /      80.52456 ( 11,10)     83.08245 ( 42,11)     89.95755 ( 52,17)     93.36450 (277, 9)     76.29153 (277, 9)
   832950.0 /      74.03675 ( 42,11)     80.38265 ( 52,17)     83.86906 (277, 9)     74.50397 (277, 9)     90.13869 ( 50,17)
   832900.0 /      71.08084 ( 52,17)     81.33624 (348,18)     69.55731 (277, 9)     75.84911 ( 50,17)     88.34648 ( 35,13)
   832850.0 /      82.65910 (348,18)     63.54397 (277, 9)     62.80361 ( 50,17)     79.21883 ( 50,17)     80.69574 (271,18)
   832800.0 /      59.25565 ( 10,10)     60.92876 (317,10)     76.60555 (311, 9)     71.85284 ( 35,13)     81.70888 (353, 9)
   832750.0 /      57.23512 (317,10)     76.47679 (311, 9)     65.82993 ( 35,13)     78.82657 (353, 9)     74.89165 ( 42, 9)
   832700.0 /      69.27370 (311, 9)     79.99175 (311, 9)     64.65524 (353, 9)     82.44447 (353, 9)     76.10193 ( 42, 9)
   832650.0 /      86.54568 (311, 9)     54.14476 ( 35,13)     79.10106 (353, 9)     70.05048 (353, 9)     72.10114 ( 42, 9)
   832600.0 /      70.13648 (311, 9)     67.08491 (353, 9)     78.65118 (353, 9)     69.25877 ( 42, 9)     79.54152 (309,10)
   832550.0 /      53.38006 (353, 9)     75.63052 (353, 9)     66.96971 (353, 9)     66.60162 ( 42, 9)     79.55470 (309,10)
   832500.0 /      66.06087 (353, 9)     73.02741 (353, 9)     64.22478 ( 42, 9)     71.52798 (309,10)     77.15853 ( 22, 9)
   832450.0 /      70.57793 (353, 9)     62.52437 (353, 9)     62.20926 ( 42, 9)     74.28854 (309,10)     75.25510 ( 22, 9)
   832400.0 /      66.90519 (353, 9)     60.38446 ( 42, 9)     63.47109 (309,10)     71.61034 (309,10)     69.43043 ( 22, 9)
   832350.0 /      57.67583 (353, 9)     58.70485 ( 42, 9)     67.23009 (309,10)     69.90926 ( 22, 9)     66.68578 (274, 9)
   832300.0 /      57.30262 ( 42, 9)     56.90002 (309,10)     66.97396 (309,10)     67.65060 ( 22, 9)     68.23920 (274, 9)
   832250.0 /      55.83645 ( 42, 9)     60.75734 (309,10)     63.44075 (309,10)     62.92491 ( 22, 9)     67.66685 (274, 9)
   832200.0 /      53.34697 ( 42, 9)     61.77227 (309,10)     63.15384 ( 22, 9)     60.22713 (274, 9)     65.39502 (274, 9)
   832150.0 /      55.49064 (309,10)     60.16820 (309,10)     60.94863 ( 22, 9)     61.49271 (274, 9)     61.93072 (274, 9)
   832100.0 /      56.97020 (309,10)     58.13680 ( 22, 9)     57.09286 ( 22, 9)     61.37286 (274, 9)     60.09825 (274, 9)
   832050.0 /      56.47447 (309,10)     57.49421 ( 22, 9)     55.30994 (274, 9)     60.15633 (274, 9)     66.54308 (274, 9)
   832000.0 /      76.75300 (348,18)    111.44620 ( 35,20)    210.44740 (311, 9)    155.10020 (353, 9)    151.36800 (274, 9)
                                                                                                                          HIGH
                                                                                                                          1-HR
                                                                                                                        SGROUP
                                   *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***

                                 * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                           * FROM ALL SOURCES *
                                                        * FOR THE RECEPTOR GRID *

                              * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

    Y-AXIS   /                                                    X-AXIS (METERS)
   (METERS)  /             818000.0                  818050.0                  818100.0                  818150.0                  818200.0
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

   833500.0 /     139.14680 (169, 9)    133.56330 (202,10)    124.66050 (156,18)    116.58110 (123,12)    103.56200 (117, 9)
   833450.0 /      98.82685 (135,14)     91.41782 (213,18)     89.29675 (106,15)     75.26757 (106,15)     53.59219 (131,11)
   833400.0 /      98.70586 (196,12)     84.49510 (216,16)     63.36908 (150,14)     47.00267 (135,12)     47.25750 (220,10)
   833350.0 /      97.18684 (251,17)     82.79659 (135,15)     64.59693 (172,12)     52.15718 (251,16)     50.55739 ( 46,13)
   833300.0 /      94.23660 (194,14)     98.91244 (203,14)     83.06966 (203,14)     53.30788 (251,16)     51.20642 (149, 9)
   833250.0 /      87.53699 (126,16)     94.47867 (207,12)     74.52731 (266,15)     49.25351 (251,16)     49.80814 (348,15)
   833200.0 /      94.75215 ( 29,14)     86.28033 (105,10)     85.82244 ( 46,14)     84.46982 (251,15)     85.34959 (197,13)
   833150.0 /      94.31381 ( 42,11)     97.55790 ( 46,14)     97.27705 (172,11)     96.87310 (251,15)     86.96780 (152,14)
   833100.0 /     100.27680 (277, 9)     90.83006 ( 57,17)     97.68309 (280,16)     99.12144 (218,16)     88.46977 (261,15)
   833050.0 /      87.29899 ( 12,11)    100.24330 ( 35,13)     98.07127 (358,10)     94.49590 (245,15)     93.21052 (261,15)
   833000.0 /     100.86570 ( 50,17)    100.78010 (271,18)    101.42020 (341,16)    101.99890 (226, 9)    102.78510 ( 58,16)
   832950.0 /      92.48988 (271,18)     97.15551 (358,10)     99.53635 ( 61,16)     97.90989 (226, 9)    105.00380 ( 58,16)
   832900.0 /      89.03725 (271,18)     96.08839 ( 42, 9)     94.19174 ( 61,16)     88.84921 (281, 9)    101.59110 ( 58,16)
   832850.0 /      84.22833 ( 42, 9)     84.90997 (341,16)     90.93401 (226, 9)     90.75837 (281, 9)     95.44476 ( 58,16)
   832800.0 /      85.35062 ( 42, 9)     81.66615 ( 61,16)     85.96461 (226, 9)     88.64346 (281, 9)     88.27295 ( 58,16)
   832750.0 /      78.58389 ( 42, 9)     81.13044 ( 22, 9)     78.37581 (274, 9)     84.23479 (281, 9)     82.24539 (  8,11)
   832700.0 /      83.59415 (309,10)     74.60475 (274, 9)     72.19743 (274, 9)     78.71566 (281, 9)     78.37302 (  8,11)
   832650.0 /      82.17493 ( 22, 9)     81.87891 (274, 9)     77.99503 (  8, 9)     73.85435 ( 58,16)     77.93496 (323,18)
   832600.0 /      81.47315 ( 22, 9)     82.83599 (274, 9)     85.27755 (  8, 9)     69.52773 ( 58,16)     82.88744 (323,18)
   832550.0 /      74.56250 ( 22, 9)     79.08142 (274, 9)     87.06872 (  8, 9)     65.11957 ( 58,16)     86.27435 (323,18)
   832500.0 /      74.75446 (274, 9)     72.43617 (274, 9)     84.61157 (  8, 9)     60.80875 ( 58,16)     88.34831 (323,18)
   832450.0 /      76.40927 (274, 9)     76.13558 (  8, 9)     79.33044 (  8, 9)     56.69655 ( 58,16)     89.35122 (323,18)
   832400.0 /      74.74978 (274, 9)     83.25138 (  8, 9)     72.47044 (  8, 9)     54.57160 (323,18)     89.50142 (323,18)
   832350.0 /      70.66797 (274, 9)     86.53914 (  8, 9)     64.94661 (  8, 9)     58.92666 (323,18)     88.98698 (323,18)
   832300.0 /      65.12577 (274, 9)     86.32003 (  8, 9)     57.18272 (  8, 9)     62.25620 (323,18)     87.58167 (323,18)
   832250.0 /      66.14587 (  8, 9)     83.70465 (  8, 9)     52.68510 (  4, 9)     64.91883 (323,18)     85.90022 (323,18)
   832200.0 /      72.04396 (  8, 9)     80.42207 (  8, 9)     58.26356 (  4, 9)     67.10562 (323,18)     84.05972 (323,18)
   832150.0 /      77.36387 (  8, 9)     76.82578 (  8, 9)     62.35479 (  4, 9)     69.20571 (323,18)     82.11665 (323,18)
   832100.0 /      85.81789 (  8, 9)     71.89427 (  8, 9)     65.06570 (  4, 9)     71.39236 (323,18)     80.11548 (323,18)
   832050.0 /      91.40611 (  8, 9)     67.88258 (  8, 9)     66.65185 (  4, 9)     73.40933 (323,18)     78.09467 (323,18)
   832000.0 /     129.66660 (  8, 9)    156.72960 (  4, 9)    402.06100 (  4, 9)    194.06950 (323,18)    143.92130 (323,18)
                                                                                                                          HIGH
                                                                                                                          1-HR
                                                                                                                         SGROU
                                   *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***

                                 * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                           * FROM ALL SOURCES *
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                                                    * FOR THE RECEPTOR GRID *

                         * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                   X-AXIS (METERS)
 (METERS)  /          818250.0                 818300.0                 818350.0                 818400.0                 818450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     108.35640 (123,16)      115.52830 (274,12)      120.45510 (277,13)      119.33200 ( 35,14)      119.12080 (170,15)
  833450.0 /      45.85555 (200,10)       51.59096 (149,10)       92.20793 (251,14)       84.81204 (170,15)       82.70554 (156,17)
  833400.0 /      51.34446 (271,14)       53.94205 (200,10)       61.26640 (182,14)       97.57313 (197,14)       94.13629 (123,14)
  833350.0 /      51.25290 ( 75,12)       52.14876 (326,15)       61.47811 (131,12)       90.07893 ( 64,14)       92.74429 ( 52,16)
  833300.0 /      51.71737 (220,10)       50.14328 (131,10)       70.09254 (149,12)       97.78715 (131,13)       94.24628 (131,13)
  833250.0 /      56.93005 (125,14)       81.21339 (131,11)       74.91182 (127,12)      101.91610 (219,14)       97.32346 (227,16)
  833200.0 /     102.07240 (135,12)      101.11990 (304,13)      115.48140 (131,11)      111.96760 (200,10)      109.75690 (149,10)
  833150.0 /     110.39430 (135,12)      120.21560 ( 46,13)      130.47180 ( 75,12)      126.28220 (326,15)      113.37590 (200,10)
  833100.0 /     112.22890 ( 10,12)      125.85720 (149, 9)      131.59990 (  3,10)      135.45060 ( 77,18)      126.74570 ( 72,13)
  833050.0 /     107.55130 ( 10,12)      118.94690 (348,15)      140.48460 (252, 9)      129.68940 (  3,10)      139.50490 ( 39,11)
  833000.0 /     108.16390 ( 76,14)      124.34260 (340,16)      132.39800 (252, 9)      143.58590 ( 42,10)      137.22100 ( 77,18)
  832950.0 /     109.30300 ( 76,14)      121.78780 (340,16)      129.05160 (348,15)      136.41650 (252, 9)      125.21860 (  3,10)
  832900.0 /     106.09560 ( 76,14)      117.17970 (353,12)      124.68020 (348,15)      129.61620 (252, 9)      127.68380 ( 42,10)
  832850.0 /     100.76020 ( 76,14)      109.47050 (353,12)      113.13250 (348,15)      111.79700 (252, 9)      118.76740 ( 42,10)
  832800.0 /      95.03386 (  8,11)      100.72110 ( 77,11)      105.11110 (340,16)      107.57160 (333, 9)      111.66000 (252, 9)
  832750.0 /      89.22613 (  8,11)       94.71436 ( 77,11)       98.76303 (340,16)      111.56990 (333, 9)      100.52000 (252, 9)
  832700.0 /      83.44757 (  8,11)       94.81365 (237, 9)       91.02700 (340,16)      111.47530 (310,10)      101.24620 (333, 9)
  832650.0 /      77.91693 (  8,11)       95.85027 (237, 9)       83.53831 (342,18)      108.92940 (342,18)      111.75150 (333, 9)
  832600.0 /      72.73375 (  8,11)       95.31431 (237, 9)       83.13070 (237, 9)      107.52520 (342,18)      113.10630 (333, 9)
  832550.0 /      67.93272 (  8,11)       93.67750 (237, 9)       87.91434 (237, 9)      102.37670 (342,18)      111.00670 (310,10)
  832500.0 /      64.31153 (237, 9)       91.32114 (237, 9)       90.66065 (237, 9)       95.09242 (342,18)      106.44420 (310,10)
  832450.0 /      62.28507 (237, 9)       88.48389 (237, 9)       91.78278 (237, 9)       86.81944 (342,18)      101.97070 (342,18)
  832400.0 /      59.99521 (237, 9)       85.33690 (237, 9)       91.65582 (237, 9)       79.37550 (360, 9)       99.26939 (342,18)
  832350.0 /      57.54500 (237, 9)       82.00432 (237, 9)       90.58993 (237, 9)       72.06456 (360, 9)       94.89014 ( 15, 9)
  832300.0 /      54.99417 (237, 9)       78.52653 (237, 9)       88.77161 (237, 9)       70.72803 (237, 9)       92.31763 (360, 9)
  832250.0 /      53.56716 (323,18)       75.07478 (237, 9)       86.55073 (237, 9)       72.79601 (237, 9)       89.51315 (360, 9)
  832200.0 /      52.85213 (323,18)       71.68427 (237, 9)       84.05013 (237, 9)       74.01659 (237, 9)       84.88000 (360, 9)
  832150.0 /      52.04249 (323,18)       68.37578 (237, 9)       81.36336 (237, 9)       74.52434 (237, 9)       79.17993 (360, 9)
  832100.0 /      51.16435 (323,18)       65.16536 (237, 9)       78.56167 (237, 9)       74.44279 (237, 9)       72.98430 (360, 9)
  832050.0 /      50.23868 (323,18)       62.06915 (237, 9)       75.69964 (237, 9)       73.88137 (237, 9)       66.68883 (360, 9)
  832000.0 /      92.98611 (340,17)       86.09171 (340,13)      117.22860 (  9, 8)      141.97180 (  6, 9)      125.45370 (360, 9)
                                                                                                                              HIGH
                                                                                                                               1-HR
                                                                                                                              SGROUP
                             *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                   ***


                          * HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)     *
                                                        * FROM ALL SOURCES *
                                                    * FOR THE RECEPTOR GRID *

                         * MAXIMUM VALUE EQUALS    402.06100 AND OCCURRED AT (  818100.0,  832000.0) *

  Y-AXIS   /                                                   X-AXIS (METERS)
 (METERS)  /          818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     128.91290 (  8,17)
  833450.0 /      94.06026 (304,16)
  833400.0 /      96.97694 (123,14)
  833350.0 /      98.39140 ( 52,16)
  833300.0 /      98.25082 (188,10)
  833250.0 /      99.74643 ( 67,12)
  833200.0 /     100.38940 (  1,14)
  833150.0 /     103.38460 (149,10)
  833100.0 /     119.55050 (260,10)
  833050.0 /     130.82080 ( 72,13)
  833000.0 /     125.30950 ( 39,11)
  832950.0 /     130.60360 ( 77,18)
  832900.0 /     114.66200 ( 77,18)
  832850.0 /     108.45250 (  3,10)
  832800.0 /     122.73600 ( 26,10)
  832750.0 /     113.99790 ( 26,10)
  832700.0 /      92.73297 (252, 9)
  832650.0 /      86.20343 (252, 9)
  832600.0 /      84.27317 (333, 9)
  832550.0 /      97.74263 (333, 9)
  832500.0 /     104.45920 (333, 9)
  832450.0 /     105.09020 (333, 9)
  832400.0 /     102.21620 (310,10)
  832350.0 /      99.29050 (310,10)
  832300.0 /      93.76630 (310,10)
  832250.0 /      89.84241 (342,18)
  832200.0 /      91.84718 ( 15, 9)
  832150.0 /      90.80676 ( 15, 9)
  832100.0 /      87.45046 ( 15, 9)
  832050.0 /      85.12458 (360, 9)
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 832000.0 /    160.35350 (360, 9)
                                                                                                                        2ND H
                                                                                                                         1-HR
                                                                                                                        SGROU

                                 *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                ***


                              * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                         * FROM ALL SOURCES *
                                                       * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS    158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

  Y-AXIS    /                                                   X-AXIS (METERS)
 (METERS)  /            817000.0              817050.0              817100.0              817150.0              817200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /       36.65500 ( 66, 9)     37.57878 ( 66, 9)     40.34880 (327,18)     42.90804 ( 15,10)     43.90781 ( 15,10)
  833450.0 /       37.47960 (261,18)     38.93968 (275, 9)     40.36404 (275, 9)     41.92215 ( 15,10)     45.45037 ( 15,10)
  833400.0 /       42.92603 (  9, 9)     40.16520 (  9, 9)     40.64961 (275, 9)     43.42025 (275, 9)     46.44595 (275, 9)
  833350.0 /       56.65488 (358, 9)     59.02755 (358, 9)     61.61714 (358, 9)     64.42648 (358, 9)     67.45571 (358, 9)
  833300.0 /       57.68070 (  9, 9)     55.22887 (  9, 9)     55.84565 ( 29,18)     58.75121 ( 29,18)     61.77791 ( 29,18)
  833250.0 /       47.01571 ( 29,18)     48.47840 ( 11, 9)     54.68091 ( 11, 9)     56.28608 (358, 9)     56.30112 (358, 9)
  833200.0 /       43.86089 (326,18)     46.04552 (326,18)     47.88079 (326,18)     49.18472 (326,18)     49.73913 (326,18)
  833150.0 /       37.85532 (257,17)     39.67909 (257,17)     43.50529 (287,18)     48.77573 (364,18)     55.68683 (364,18)
  833100.0 /       49.56470 ( 11, 9)     44.14223 (287,18)     43.58106 (287,18)     53.42551 ( 34,18)     55.29655 (364,18)
  833050.0 /       45.53696 (364,18)     42.35535 (364,18)     49.42939 (343,18)     56.08403 (343,18)     60.59591 (343,18)
  833000.0 /       50.63288 (343,18)     52.97115 (343,18)     52.60475 (343,18)     53.33716 (269, 9)     59.20415 (360,18)
  832950.0 /       46.24863 (  2, 9)     51.90221 (360,18)     50.11052 (360,18)     44.90940 (335,18)     49.66248 (335,18)
  832900.0 /       40.73781 (360,18)     42.81562 (335,18)     44.59097 (335,18)     45.54740 (  4,10)     48.66311 (  4,10)
  832850.0 /       39.23160 (335,18)     42.32077 (  4,10)     46.12902 (314, 9)     67.45314 (314, 9)     69.51593 (359,18)
  832800.0 /       46.75911 (314, 9)     62.59372 (359,18)     63.45253 (359,18)     56.86663 (359,18)     67.04395 (315, 9)
  832750.0 /       58.02090 (359,18)     52.26483 (359,18)     60.25812 (315, 9)     66.17420 (315, 9)     67.08024 (315, 9)
  832700.0 /       54.61716 (315, 9)     59.92704 (315, 9)     61.68040 (315, 9)     58.79728 (310, 9)     60.48405 (  8,10)
  832650.0 /       57.55295 (  8,10)     55.11263 (315, 9)     57.79444 (  8,10)     54.26434 ( 11,10)     52.91142 (310, 9)
  832600.0 /       54.05976 (310, 9)     50.06213 (  8,10)     54.62362 (310, 9)     49.05830 ( 10, 9)     42.65989 ( 10, 9)
  832550.0 /       48.53723 ( 11,10)     46.35831 (310, 9)     44.20800 ( 10, 9)     35.75629 ( 10, 9)     35.66162 ( 30,17)
  832500.0 /       42.88191 ( 10, 9)     38.82753 ( 10, 9)     31.77779 (279,10)     33.56708 ( 30,17)     34.74543 ( 19,15)
  832450.0 /       33.47250 ( 10, 9)     29.77921 ( 30,17)     32.97936 (332, 9)     33.62230 (  5, 9)     39.66986 (  5, 9)
  832400.0 /       29.54894 (348,18)     32.86138 (332, 9)     33.20312 (  5, 9)     38.21048 (348,18)     39.17250 (332, 9)
  832350.0 /       29.91519 ( 11,10)     32.48776 (  5, 9)     38.30627 (332, 9)     38.14560 (309, 9)     52.81802 (309, 9)
  832300.0 /       33.01619 (348,18)     36.02333 (332, 9)     37.56205 (309, 9)     50.59661 (309, 9)     54.72738 (348,18)
  832250.0 /       38.20360 (348,18)     44.41354 (348,18)     48.49083 (309, 9)     51.93567 (348,18)     46.11217 (309, 9)
  832200.0 /       43.24625 (348,18)     47.83905 (348,18)     50.32878 (309, 9)     44.48108 (309, 9)     40.95303 (360,17)
  832150.0 /       44.63442 (309, 9)     47.10068 (348,18)     42.88799 (309, 9)     35.61983 ( 48,15)     32.90875 (278, 9)
  832100.0 /       45.00470 (348,18)     41.34405 (309, 9)     30.65767 (309, 9)     28.82038 (242,20)     27.62735 (317,10)
  832050.0 /       39.85652 (309, 9)     30.23227 (309, 9)     27.27476 (269, 9)     26.23504 (317,10)     31.00965 (348,18)
  832000.0 /       29.74184 (309, 9)     27.33843 (348,18)     25.00881 ( 49,11)     31.16257 (311, 9)     39.50503 (317,10)
                                                                                                                        2ND H
                                                                                                                         1-HR
                                                                                                                        SGROUP

                                 *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                ***


                              * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                         * FROM ALL SOURCES *
                                                       * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS    158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

  Y-AXIS    /                                                   X-AXIS (METERS)
 (METERS)  /            817250.0              817300.0              817350.0              817400.0              817450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /       44.39817 ( 15,10)     45.47063 (  7,18)     54.94713 (  7,18)     56.67376 (327,18)     59.82391 (  6,17)
  833450.0 /       49.24389 ( 15,10)     53.35543 ( 15,10)     56.54537 ( 66, 9)     58.98925 ( 66, 9)     55.04634 ( 35,17)
  833400.0 /       49.79357 (261,18)     53.55832 (261,18)     57.59835 (261,18)     61.88051 (261,18)     56.18532 (275, 9)
  833350.0 /       70.71337 (358, 9)     74.15083 (358, 9)     77.66893 (358, 9)     81.19545 (358, 9)     57.17469 (123,18)
  833300.0 /       64.88418 ( 29,18)     67.95251 ( 29,18)     70.89306 ( 29,18)     73.55968 ( 29,18)     56.02217 (270, 9)
  833250.0 /       55.89324 (358, 9)     54.93716 (358, 9)     57.99949 (326,18)     62.32484 (326,18)     54.78444 (119,17)
  833200.0 /       49.62098 (257,17)     53.51783 (257,17)     57.01506 (257,17)     61.05234 ( 88, 9)     55.15586 ( 88, 9)
  833150.0 /       61.28009 ( 11, 9)     55.16032 (287,18)     57.64383 ( 34,18)     67.25489 (364,18)     54.92018 ( 46,18)
  833100.0 /       50.87945 (364,18)     60.12982 (343,18)     68.07265 (343,18)     72.49950 (269, 9)     53.96280 (256,18)
  833050.0 /       61.49069 (343,18)     63.79557 (269, 9)     67.62128 (360,18)     62.81885 (360,18)     51.32104 (220, 9)
  833000.0 /       56.38726 (360,18)     53.24081 (335,18)     57.12703 (335,18)     58.84070 (  4,10)     52.03658 (150,17)
  832950.0 /       49.66259 (335,18)     54.05014 (  4,10)     68.63647 (314, 9)     82.95704 (359,18)     65.93382 (315, 9)
  832900.0 /       68.82450 (314, 9)     76.18327 (359,18)     70.16924 (315, 9)     84.58022 (315, 9)     76.03457 (315, 9)
  832850.0 /       62.84751 (315, 9)     75.11169 (315, 9)     81.37349 (315, 9)     77.74482 (315, 9)     62.36695 (310, 9)
  832800.0 /       73.34541 (315, 9)     72.60910 (315, 9)     74.16736 (  8,10)     73.49863 (310, 9)     52.46176 ( 59, 9)
  832750.0 /       67.45079 (310, 9)     61.93336 (  8,10)     61.10442 ( 10, 9)     55.72793 ( 10, 9)     44.36022 ( 30,17)
  832700.0 /       63.23621 (310, 9)     56.42639 ( 10, 9)     46.06831 ( 10, 9)     46.68690 ( 30,17)     43.65786 ( 19,15)
  832650.0 /       49.82832 ( 10, 9)     40.86995 (279,10)     43.22808 ( 30,17)     46.32728 (  5, 9)     46.86071 (348,18)
  832600.0 /       37.52806 ( 30,17)     42.16583 (332, 9)     45.26959 (  5, 9)     52.76887 (348,18)     51.71747 (309, 9)
  832550.0 /       39.15345 ( 11,10)     43.67551 (  5, 9)     49.83470 (332, 9)     62.58308 (309, 9)     57.59522 (309, 9)
  832500.0 /       41.75772 (  5, 9)     45.89238 (332, 9)     60.06131 (309, 9)     68.13332 (309, 9)     43.62277 (309, 9)
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  832450.0 /     42.35077 (332, 9)      57.56987 (309, 9)      64.65125 (309, 9)      52.56094 (309, 9)      36.85567 (104,18)
  832400.0 /     55.14729 (309, 9)      61.20664 (348,18)      51.02969 (309, 9)      37.40811 (104,18)      35.16164 ( 49,11)
  832350.0 /     57.80727 (348,18)      49.41519 (309, 9)      34.90218 ( 10,10)      35.34012 ( 49,11)      33.70927 (317,10)
  832300.0 /     47.76479 (309, 9)      39.30037 (  9, 9)      33.15682 (104,18)      40.22679 (311, 9)      31.20749 (353, 9)
  832250.0 /     46.95424 (214,18)      41.81043 (214,18)      32.84309 ( 28, 9)      34.45607 (353, 9)      30.82475 (353, 9)
  832200.0 /     44.60711 ( 48,15)      33.48085 (126,16)      33.08106 (353, 9)      34.13579 (353, 9)      31.93078 (353, 9)
  832150.0 /     30.15703 (278, 9)      30.78208 (353, 9)      46.55802 ( 50,17)      34.58491 (353, 9)      34.65193 (353, 9)
  832100.0 /     32.58061 (277, 9)      45.48278 ( 50,17)      48.68243 ( 42, 9)      36.26017 (353, 9)      38.46832 (353, 9)
  832050.0 /     44.09169 (317,10)      48.59969 ( 35,13)      51.09070 ( 42, 9)      39.07343 (353, 9)      38.07315 ( 42, 9)
  832000.0 /     44.86507 (  1,11)      55.43859 (353, 9)      43.78784 ( 42, 9)      42.44571 (353, 9)      45.49704 (315, 9)
                                                                                                                          2ND HI
                                                                                                                           1-HR
                                                                                                                          SGROUP
                                   *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                              * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                           * FROM ALL SOURCES *
                                                        * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS     158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

  Y-AXIS   /                                                   X-AXIS (METERS)
 (METERS)  /          817500.0               817550.0               817600.0               817650.0               817700.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     71.24504 ( 17, 9)      84.26485 ( 17, 9)      91.38165 ( 17, 9)      87.05111 ( 17, 9)      97.50758 (  7,18)
  833450.0 /     57.37553 (327,18)      61.03468 ( 35,17)      66.31967 ( 83,18)      75.33212 ( 83,18)      84.26239 ( 83,18)
  833400.0 /     60.08369 ( 35,17)      66.24743 ( 35,17)      72.97698 ( 35,17)      80.09417 ( 35,17)      86.36465 ( 71,18)
  833350.0 /     62.23049 (123,18)      67.82805 (123,18)      73.95171 (161,17)      80.51913 (161,17)      87.31964 (161,17)
  833300.0 /     60.86414 (214,18)      66.53218 (214,18)      72.63512 (214,18)      77.19345 (270, 9)      82.46457 (270, 9)
  833250.0 /     60.23978 (119,17)      65.98318 (119,17)      71.70424 ( 38,13)      76.86343 (119,17)      80.56306 (119,17)
  833200.0 /     55.96241 ( 88, 9)      58.70624 ( 58,15)      63.46560 ( 48,15)      74.16737 ( 48,15)      84.18430 ( 48,15)
  833150.0 /     60.06201 (269, 9)      64.98036 ( 48,15)      69.52924 ( 48,15)      70.57483 (269, 9)      67.34240 ( 48,15)
  833100.0 /     56.32040 (363, 9)      60.60077 (220, 9)      55.61242 (349,10)      64.20931 (349,10)      66.76777 (220, 9)
  833050.0 /     53.69504 (349,10)      57.65594 (150,17)      62.87309 (314, 9)      71.52000 (315, 9)      78.80068 (  8,10)
  833000.0 /     62.89442 (359,18)      70.14315 (315, 9)      78.25413 (  8,10)      77.76349 (315, 9)      71.82380 ( 11,10)
  832950.0 /     78.52766 (315, 9)      79.22441 (315, 9)      67.29719 ( 59, 9)      69.72943 ( 59, 9)      63.53251 ( 42,11)
  832900.0 /     67.67100 (315, 9)      66.11811 ( 59, 9)      60.25233 ( 59, 9)      58.95452 ( 42,11)      65.03355 ( 42,11)
  832850.0 /     60.28233 ( 59, 9)      52.82055 (279,10)      55.13116 ( 30,17)      57.72894 (236, 9)      64.33507 (332, 9)
  832800.0 /     48.51524 (279,10)      51.44291 (332, 9)      53.10880 ( 48,17)      59.39050 (332, 9)      61.04484 (309, 9)
  832750.0 /     47.38495 ( 19,15)      49.41490 ( 48,17)      54.47572 (332, 9)      62.17608 (309, 9)      55.42246 ( 10,10)
  832700.0 /     46.66070 (348,18)      52.56324 (309, 9)      62.12086 (309, 9)      51.35246 ( 10,10)      52.50746 ( 49,11)
  832650.0 /     52.53703 (309, 9)      61.23855 (309, 9)      47.35236 ( 10,10)      48.05843 (  1,10)      47.92600 (317,10)
  832600.0 /     59.57821 (309, 9)      43.60329 ( 10,10)      45.23633 (  1,10)      46.19199 (317,10)      46.84233 ( 50,17)
  832550.0 /     43.77801 (309, 9)      42.33231 (  1,10)      43.64053 ( 49,11)      41.96080 ( 50,17)      46.77026 (  1,11)
  832500.0 /     39.51801 (  1,10)      40.82089 ( 49,11)      37.91787 ( 50,17)      42.81784 (  1,11)      44.77082 ( 42, 9)
  832450.0 /     37.93719 ( 49,11)      36.09824 (317,10)      38.33332 (  1,11)      42.35268 ( 42, 9)      47.47605 ( 42, 9)
  832400.0 /     35.09024 (317,10)      34.73677 ( 50,17)      39.45161 ( 42, 9)      44.59842 ( 42, 9)      50.28136 ( 42, 9)
  832350.0 /     32.10068 ( 50,17)      36.20230 (  1,11)      41.57899 ( 42, 9)      47.02217 ( 42, 9)      52.70120 ( 42, 9)
  832300.0 /     33.20586 (  1,11)      38.29254 ( 42, 9)      43.82924 ( 42, 9)      49.31474 ( 42, 9)      54.35952 ( 42, 9)
  832250.0 /     34.79146 ( 42, 9)      40.88691 (353, 9)      46.03378 ( 42, 9)      51.17570 ( 42, 9)      53.18561 (353, 9)
  832200.0 /     37.09129 ( 42, 9)      42.72254 ( 42, 9)      47.98650 ( 42, 9)      52.37829 ( 42, 9)      43.37812 (353, 9)
  832150.0 /     39.33198 ( 42, 9)      44.74886 ( 42, 9)      49.49750 ( 42, 9)      49.13595 (353, 9)      44.74258 (309,10)
  832100.0 /     41.43885 ( 42, 9)      46.46646 ( 42, 9)      50.42796 ( 42, 9)      41.10470 (105, 9)      48.49572 (309,10)
  832050.0 /     43.31467 ( 42, 9)      47.75249 ( 42, 9)      45.52824 (353, 9)      44.88545 ( 11,10)      48.57923 ( 42, 9)
  832000.0 /     48.32695 (  8,10)      48.52327 ( 42, 9)      50.32158 ( 42, 9)      45.70105 (309,10)      59.34700 (309,10)
                                                                                                                          2ND HI
                                                                                                                           1-HR
                                                                                                                          SGROUP
                                   *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                              * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                           * FROM ALL SOURCES *
                                                        * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS     158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

  Y-AXIS   /                                                   X-AXIS (METERS)
 (METERS)  /          817750.0               817800.0               817850.0               817900.0               817950.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /    101.21460 (342,12)      96.20242 (  3, 9)      95.15714 (265,18)     113.66900 (161,18)     137.97470 (  2,17)
  833450.0 /     92.29639 (  9,16)      97.37859 ( 29,16)      99.48650 ( 29,16)      90.10128 (171,17)      95.99666 (201,10)
  833400.0 /     91.23642 ( 71,18)      93.49398 ( 71,18)      90.88243 ( 71,18)      92.28648 ( 83,18)      93.40448 (196,12)
  833350.0 /     93.90553 (161,17)      99.40966 (161,17)     102.26250 (161,17)      99.84527 (161,17)      95.47990 (152,11)
  833300.0 /     86.69151 (270, 9)      93.18880 ( 38,13)      99.52322 (119,17)     100.03060 (119,17)      89.42934 (196,18)
  833250.0 /     81.41224 (119,17)      83.44352 ( 48,15)      96.56528 ( 48,15)     100.39800 ( 58,15)      90.28445 (331,10)
  833200.0 /     88.34650 ( 58,15)      88.58018 (220, 9)      77.98869 (342,16)      93.92007 (278, 9)      91.09927 (  7,11)
  833150.0 /     71.08780 (278, 9)      83.04050 (220, 9)      80.94371 (105, 9)      83.14422 (261,17)      88.29706 (126, 9)
  833100.0 /     69.07013 (105, 9)      78.82485 (278, 9)      76.96117 (261,17)      82.94305 (131, 9)     100.27770 ( 52,17)
  833050.0 /     75.00877 (  8,10)      72.85366 ( 11,10)      79.43621 (236, 9)      97.25393 (236, 9)     100.58320 (341,15)
  833000.0 /     66.22643 ( 42,11)      76.66483 (236, 9)      87.83241 (236, 9)      93.36448 (341,15)      76.29152 (341,15)
  832950.0 /     70.91965 (236, 9)      77.49576 (236, 9)      83.86892 (341,15)      74.50397 (341,15)      85.14110 ( 35,13)
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 832900.0 /      69.45939 ( 46,16)      74.39188 (277, 9)      69.55727 (341,15)      69.64513 ( 35,13)      86.41800 ( 50,17)
 832850.0 /      65.80208 (277, 9)      63.54382 (341,15)      62.24284 ( 22,17)      78.14693 ( 35,13)      73.28797 ( 35,13)
 832800.0 /      59.25565 (361,10)      60.92875 ( 22,17)      69.30993 ( 50,17)      68.28139 ( 50,17)      74.76329 ( 60, 9)
 832750.0 /      57.23510 ( 49,11)      59.66745 ( 50,17)      64.61311 ( 50,17)      68.91811 ( 60, 9)      69.90659 (353, 9)
 832700.0 /      51.47595 ( 50,17)      58.77164 ( 50,17)      58.68967 (271,18)      70.36489 ( 60, 9)      65.62091 (358,10)
 832650.0 /      52.55167 ( 50,17)      52.50356 (361,11)      65.43993 ( 60, 9)      68.40079 ( 42, 9)      70.81531 (309,10)
 832600.0 /      49.71660 ( 35,13)      54.09226 ( 60, 9)      63.96959 ( 60, 9)      55.34324 (358,10)      64.97290 ( 42, 9)
 832550.0 /      47.98622 (361,11)      60.15607 ( 60, 9)      63.82382 ( 42, 9)      62.64093 (309,10)      73.53558 ( 22, 9)
 832500.0 /      51.57155 ( 60, 9)      58.42891 ( 42, 9)      50.78113 (353, 9)      61.55427 ( 42, 9)      73.02643 (309,10)
 832450.0 /      54.57831 ( 60, 9)      60.35568 ( 42, 9)      55.67262 (309,10)      63.48112 ( 22, 9)      62.91723 (309,10)
 832400.0 /      56.36790 ( 42, 9)      48.73598 (353, 9)      58.40857 ( 42, 9)      68.75430 ( 22, 9)      62.72031 (274, 9)
 832350.0 /      57.51641 ( 42, 9)      50.54792 (309,10)      59.52190 (341,18)      65.09212 (309,10)      61.36584 ( 22, 9)
 832300.0 /      46.09734 (353, 9)      55.68695 ( 42, 9)      60.52620 ( 22, 9)      56.62818 (309,10)      52.57233 ( 22, 9)
 832250.0 /      47.12840 (309,10)      54.89188 (341,18)      63.14124 ( 22, 9)      57.50758 (274, 9)      46.70669 (319, 9)
 832200.0 /      52.06885 (309,10)      54.78564 (341,18)      57.69104 (309,10)      57.76375 ( 42,11)      50.96502 ( 46,14)
 832150.0 /      50.11008 ( 42, 9)      57.03950 ( 22, 9)      57.33667 ( 42,11)      55.38695 (277, 9)      45.81185 ( 35,13)
 832100.0 /      51.47039 (341,18)      56.50891 (309,10)      53.78714 (277, 9)      50.23088 ( 46,14)      51.62800 (  8, 9)
 832050.0 /      52.07557 ( 22, 9)      53.21892 (236, 9)      52.19370 (277, 9)      51.44515 ( 35,13)      58.10537 (  8, 9)
 832000.0 /      76.64870 (309, 9)     110.03200 (355,14)     120.18350 ( 22,19)     118.98690 ( 60, 9)     129.90240 (  8, 9)
                                                                                                                              2ND H
                                                                                                                               1-HR
                                                                                                                              SGROU

                               *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                   ***


                          * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)        *
                                                         * FROM ALL SOURCES *
                                                      * FOR THE RECEPTOR GRID *

                           * MAXIMUM VALUE EQUALS    158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                                        X-AXIS (METERS)
(METERS)  /            818000.0               818050.0               818100.0               818150.0               818200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     128.62480 (258,18)     131.65640 (169,10)     114.82090 (142,17)     114.39270 (205,12)      95.65446 (216,15)
 833450.0 /      96.06396 (201,10)      91.35459 (171,15)      82.56670 (171,13)      73.88132 (197,11)      37.88671 (108,10)
 833400.0 /      97.37476 (119,18)      84.24819 (119,18)      63.06730 (227,15)      42.74731 (149, 9)      45.28329 (339,15)
 833350.0 /      96.01855 (152,11)      80.39601 (312,13)      56.91384 (179,13)      51.71176 (313,12)      48.97980 (220,10)
 833300.0 /      93.11623 (127, 9)      84.12926 (205,14)      81.78971 (108,12)      51.65401 (313,12)      48.22461 ( 46,13)
 833250.0 /      84.03279 (280,13)      91.75146 (108,12)      71.71599 (207,12)      48.40395 ( 10,12)      49.76875 (149, 9)
 833200.0 /      91.07760 (126,10)      82.30454 (261,14)      85.13354 (262,10)      76.43499 (104,14)      75.99117 (251,15)
 833150.0 /      92.94283 (236, 9)      95.64491 (261,14)      91.57145 (219, 9)      87.31818 (218,16)      82.59338 (197,13)
 833100.0 /     100.27680 (341,15)      89.89648 ( 12,11)      95.69078 (219, 9)      89.93262 (245,15)      85.52051 (152,14)
 833050.0 /      85.14711 ( 57,17)      96.95374 ( 50,17)      95.50091 ( 42, 9)      91.19380 ( 61,16)      92.91481 (281, 9)
 833000.0 /      99.02117 ( 35,13)      85.95262 (360,16)      99.28069 ( 42, 9)      89.82542 ( 22,10)     100.41240 (281, 9)
 832950.0 /      91.20308 ( 35,13)      95.25220 ( 42, 9)      88.83501 (341,16)      84.09182 ( 77, 9)      98.83701 (281, 9)
 832900.0 /      76.19328 (358,10)      93.23341 (341,16)      89.52248 (226, 9)      86.63092 (226, 9)      92.72243 (281, 9)
 832850.0 /      83.04644 (358,10)      84.41674 ( 42, 9)      81.42745 ( 61,16)      81.42146 ( 58,16)      87.51948 (  8,11)
 832800.0 /      78.27097 (358,10)      78.53060 ( 22, 9)      78.73161 (274, 9)      82.44110 ( 58,16)      85.49038 (  8,11)
 832750.0 /      77.21124 (309,10)      75.16044 ( 61,16)      77.80352 (226, 9)      80.90120 ( 58,16)      80.99246 ( 58,16)
 832700.0 /      74.10525 ( 22, 9)      73.95211 ( 22, 9)      68.59986 (226, 9)      77.80238 ( 58,16)      74.05563 ( 58,16)
 832650.0 /      78.80431 (309,10)      68.90701 (319, 9)      66.74514 (281, 9)      72.82388 (281, 9)      74.24349 (  8,11)
 832600.0 /      67.47806 (309,10)      63.22824 (226, 9)      64.92220 (281, 9)      66.98849 (281, 9)      70.08292 (  8,11)
 832550.0 /      69.09023 (274, 9)      57.51741 (226, 9)      62.30349 (281, 9)      61.44072 (281, 9)      66.02477 (  8,11)
 832500.0 /      64.43839 ( 22, 9)      65.32034 (  8, 9)      59.22288 (281, 9)      56.29110 (281, 9)      62.14389 (  8,11)
 832450.0 /      57.06890 (319, 9)      64.42085 (274, 9)      55.92117 (281, 9)      52.79586 (348,14)      58.47845 (  8,11)
 832400.0 /      50.16285 (319, 9)      56.10831 (274, 9)      52.56412 (281, 9)      52.83475 ( 58,16)      55.04392 (  8,11)
 832350.0 /      48.54699 (  8, 9)      48.14660 (274, 9)      49.42474 ( 58,16)      49.24454 ( 58,16)      51.84206 (  8,11)
 832300.0 /      58.16980 (  8, 9)      45.31979 (281, 9)      47.43736 ( 58,16)      46.67743 ( 58,16)      50.46972 (356, 9)
 832250.0 /      58.91192 (274, 9)      45.43172 (281, 9)      51.55597 (281, 9)      50.83872 (  8,11)      49.06450 (356, 9)
 832200.0 /      53.27047 (274, 9)      50.20824 (281, 9)      57.17341 (281, 9)      55.52771 (  8,11)      47.63128 (356, 9)
 832150.0 /      57.82046 (226, 9)      54.27349 (281, 9)      58.97840 ( 58,16)      56.18159 (  8,11)      46.19486 (356, 9)
 832100.0 /      62.18078 (281, 9)      56.31610 (281, 9)      58.28059 ( 58,16)      55.20560 (  8,11)      46.13432 (  8,11)
 832050.0 /      66.13379 (281, 9)      56.46846 (281, 9)      56.68240 ( 58,16)      54.08392 (  8,11)      47.35445 (  8,11)
 832000.0 /      76.99667 (281, 9)     149.39720 (  8, 9)     154.07380 (314, 8)     158.78000 ( 61,20)     113.11720 ( 22,14)
                                                                                                                              2ND H
                                                                                                                               1-HR
                                                                                                                              SGROUP

                               *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                   ***


                          * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)        *
                                                         * FROM ALL SOURCES *
                                                      * FOR THE RECEPTOR GRID *

                           * MAXIMUM VALUE EQUALS    158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                                        X-AXIS (METERS)
(METERS)  /            818250.0               818300.0               818350.0               818400.0               818450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     106.92330 (302,16)      92.77937 (216,13)     114.94360 (125,16)     117.39060 ( 33,17)     112.55060 ( 84,15)
 833450.0 /      45.50193 (266,12)      47.26927 (219,15)      67.78086 (260,15)      84.30018 (152,12)      77.09228 (304,16)
 833400.0 /      50.86794 (106,16)      53.68315 (266,12)      59.80212 (181,11)      72.05411 (304,16)      93.65221 (260,14)
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  833350.0 /      51.13758 (131,10)     51.26257 ( 42,12)     50.95211 (260,10)     73.93386 (107,13)     90.56843 ( 76,15)
  833300.0 /      47.28318 ( 75,12)     49.52373 ( 39,11)     69.13444 (234,12)     95.35721 (234,12)     94.12114 (188,10)
  833250.0 /      52.68211 (252, 9)     65.22125 (261,13)     74.72964 ( 75,13)     86.99100 (219,15)     96.09170 (120, 9)
  833200.0 /      82.49640 (125,14)    100.97050 (220,10)    113.17900 (271,14)    111.92320 (266,12)    107.46560 (219,15)
  833150.0 /     101.19640 ( 10,12)    113.42470 (149, 9)    121.46470 (131,10)    125.06280 ( 42,12)    113.34560 (266,12)
  833100.0 /     103.75870 (251,16)    121.89490 ( 69,14)    130.81010 ( 42,10)    134.78180 ( 22,13)    113.87830 (326,15)
  833050.0 /      99.87525 (261,15)    117.71930 ( 69,14)    140.11100 (261,16)    119.76960 ( 42,10)    134.46680 ( 77,18)
  833000.0 /     102.74820 (  8,11)    117.43660 (353,12)    132.06410 (261,16)    143.52820 (  3,10)    136.80900 ( 22,13)
  832950.0 /     106.18870 (  8,11)    121.21020 (353,12)    109.14220 (252, 9)    136.18330 (261,16)    117.76590 ( 42,10)
  832900.0 /     104.63250 (  8,11)    113.10020 (340,16)    105.72550 (340,16)    129.40310 (261,16)    127.32650 (  3,10)
  832850.0 /     100.43810 (  8,11)    105.49800 ( 77,11)    108.31590 (340,16)    111.61350 (261,16)    115.12320 (252, 9)
  832800.0 /      94.55621 ( 76,14)    100.44380 (353,12)     99.28456 (348,15)    107.37760 (330, 9)    111.52000 (261,16)
  832750.0 /      88.16288 ( 76,14)     91.64743 (237, 9)     96.30437 (342,18)    111.34890 (330, 9)    100.39600 (261,16)
  832700.0 /      81.93176 ( 76,14)     88.30651 ( 77,11)     90.87254 (342,18)    106.32330 (333, 9)    101.11540 (330, 9)
  832650.0 /      76.03391 ( 76,14)     81.94856 ( 77,11)     83.41789 (353,12)    105.78580 (310,10)    111.59720 (330, 9)
  832600.0 /      70.54209 ( 76,14)     75.87172 ( 77,11)     77.68649 (353,12)     96.28000 (310,10)    112.93710 (330, 9)
  832550.0 /      65.94330 (237, 9)     70.18328 ( 77,11)     71.89833 (353,12)     91.19977 (360, 9)    107.86330 (333, 9)
  832500.0 /      63.51402 (  8,11)     64.92192 ( 77,11)     66.29137 (353,12)     90.32037 (360, 9)    101.45620 (342,18)
  832450.0 /      59.46045 (  8,11)     60.76018 ( 76,14)     61.20579 (353,10)     85.83920 (360, 9)     98.68941 (310,10)
  832400.0 /      55.74685 (  8,11)     56.90812 ( 76,14)     57.83377 (353,10)     78.30791 (342,18)     96.79548 ( 15, 9)
  832350.0 /      54.53787 (323,18)     53.33275 ( 76,14)     54.40816 (353,10)     70.01099 (342,18)     94.35376 (342,18)
  832300.0 /      54.15521 (323,18)     50.02321 ( 76,14)     51.09900 (353,10)     64.71941 (340,18)     89.64272 ( 15, 9)
  832250.0 /      52.43996 (237, 9)     46.96431 ( 76,14)     47.89523 (353,10)     63.87782 (340,18)     82.68433 ( 15, 9)
  832200.0 /      49.92631 (237, 9)     45.58307 ( 22,14)     44.82497 (353,10)     62.15263 (340,18)     74.98943 ( 15, 9)
  832150.0 /      47.48743 (237, 9)     44.23724 ( 22,14)     41.90451 ( 77,11)     59.84188 (340,18)     67.31250 (342,18)
  832100.0 /      45.28086 (237, 9)     42.91692 ( 22,14)     39.45261 ( 77,11)     57.17457 (340,18)     60.69579 (342,18)
  832050.0 /      43.79060 (237, 9)     41.62748 ( 22,14)     37.18047 ( 77,11)     54.31784 (340,18)     57.21486 (340,18)
  832000.0 /      91.51950 (349,12)     85.17131 (237, 9)    101.31560 (237, 9)    103.41380 (237, 9)    105.34770 (340,18)
                                                                                                                         2ND HI
                                                                                                                          1-HR
                                                                                                                         SGROUP
                                  *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***


                             * SECOND HIGHEST  1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                        * FROM ALL SOURCES *
                                                     * FOR THE RECEPTOR GRID *

                              * MAXIMUM VALUE EQUALS    158.78000 AND OCCURRED AT (  818150.0,  832000.0) *

   Y-AXIS   /                                                    X-AXIS (METERS)
  (METERS)  /          818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     125.17230 ( 36,11)
  833450.0 /      88.62139 ( 62,18)
  833400.0 /      90.10687 (260,14)
  833350.0 /      96.78889 ( 76,15)
  833300.0 /      98.24932 ( 67,11)
  833250.0 /      98.82365 (227,16)
  833200.0 /      99.06484 (120, 9)
  833150.0 /      95.56972 (319,14)
  833100.0 /     119.29490 (234, 9)
  833050.0 /     113.76840 (260,10)
  833000.0 /     116.76810 ( 77,18)
  832950.0 /     130.26040 ( 22,13)
  832900.0 /     114.40160 ( 22,13)
  832850.0 /     105.03510 ( 26,10)
  832800.0 /     107.34640 ( 42,10)
  832750.0 /     100.63440 ( 42,10)
  832700.0 /      92.63809 (261,16)
  832650.0 /      86.11747 (261,16)
  832600.0 /      84.18315 (330, 9)
  832550.0 /      97.63324 (330, 9)
  832500.0 /     104.33540 (330, 9)
  832450.0 /     104.95800 (330, 9)
  832400.0 /     101.09410 (333, 9)
  832350.0 /      94.02243 (333, 9)
  832300.0 /      90.47765 (342,18)
  832250.0 /      89.80184 ( 15, 9)
  832200.0 /      87.32969 (342,18)
  832150.0 /      84.96030 (360, 9)
  832100.0 /      86.09577 (360, 9)
  832050.0 /      82.52451 ( 15, 9)
  832000.0 /     153.29660 ( 15, 9)
                                                                                                                          HIGH
                                                                                                                          24-HR
                                                                                                                         SGROUP
                                  *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***


                                 * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                        * FROM ALL SOURCES *
                                                     * FOR THE RECEPTOR GRID *
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                 * MAXIMUM VALUE EQUALS      23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                               X-AXIS (METERS)
(METERS)  /          817000.0              817050.0           817100.0              817150.0              817200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      4.41776 ( 99, 1)      4.63887 ( 99, 1)      4.86624 ( 99, 1)      5.09756 ( 99, 1)      5.39730 (318, 1)
 833450.0 /      4.38225 ( 11, 1)      4.40604 ( 11, 1)      4.61022 ( 99, 1)      4.91490 ( 99, 1)      5.24523 ( 99, 1)
 833400.0 /      4.15445 ( 11, 1)      4.22113 ( 11, 1)      4.31228 ( 11, 1)      4.49182C(126, 1)      4.79472C(126, 1)
 833350.0 /      4.88189 (  9, 1)      4.88297 (  9, 1)      4.99742 (315, 1)      5.40333 (315, 1)      5.85601 (315, 1)
 833300.0 /      4.94230 (331, 1)      5.27124 (331, 1)      5.62235 (331, 1)      5.97056 (331, 1)      6.31941 ( 11, 1)
 833250.0 /      5.86150 ( 11, 1)      6.23630 ( 11, 1)      6.64505 ( 11, 1)      7.09736 ( 11, 1)      7.60730 ( 11, 1)
 833200.0 /      6.66319 ( 11, 1)      6.92986 ( 11, 1)      7.19406 ( 11, 1)      7.45322 ( 11, 1)      7.70644 ( 11, 1)
 833150.0 /      5.76264 ( 11, 1)      5.64884 ( 11, 1)      5.49736 ( 11, 1)      5.97442 (364, 1)      6.65419 (364, 1)
 833100.0 /      5.15112 (364, 1)      5.58960 (364, 1)      5.97083 (364, 1)      6.25400 (364, 1)      6.40291 (364, 1)
 833050.0 /      5.92059 ( 34, 1)      6.18461 ( 34, 1)      6.22921 ( 34, 1)      6.31302 (336, 1)      6.44798 (336, 1)
 833000.0 /      5.56157 ( 34, 1)      5.54848 (336, 1)      5.84348 (334, 1)      6.45139 (334, 1)      6.97937 (334, 1)
 832950.0 /      5.42959 (335, 1)      5.85601 (334, 1)      6.36961 (334, 1)      6.73661 (334, 1)      6.86405 (334, 1)
 832900.0 /      5.70446 (334, 1)      6.06798 (334, 1)      6.22845 (334, 1)      6.12791 (334, 1)      6.14022C( 30, 1)
 832850.0 /      5.58571 (334, 1)      5.52827 (334, 1)      5.85183C( 30, 1)      6.51450C( 30, 1)      7.06276C( 30, 1)
 832800.0 /      5.49002C( 30, 1)      6.18782C( 30, 1)      6.81972C( 30, 1)      7.30394C( 30, 1)      7.57099C( 30, 1)
 832750.0 /      6.41925C( 30, 1)      6.96375C( 30, 1)      7.30035C( 30, 1)      7.34980C( 30, 1)      7.09539C( 30, 1)
 832700.0 /      6.89161C( 30, 1)      7.03218C( 30, 1)      6.86466C( 30, 1)      6.43665C( 30, 1)      5.91553C( 30, 1)
 832650.0 /      6.56771C( 30, 1)      6.23993C( 30, 1)      5.73820C( 30, 1)      5.41392 (364, 1)      5.53384 (364, 1)
 832600.0 /      5.61125C( 30, 1)      5.11804C( 30, 1)      5.15823 (364, 1)      5.19130 (364, 1)      5.24937 ( 14, 1)
 832550.0 /      4.67805 (364, 1)      4.80143 (364, 1)      4.76344 (364, 1)      5.13829 ( 14, 1)      5.74441 ( 14, 1)
 832500.0 /      4.40096 (364, 1)      4.39834 ( 14, 1)      5.00259 ( 14, 1)      5.53100 ( 14, 1)      5.85846 ( 14, 1)
 832450.0 /      4.31058 ( 14, 1)      4.84984 ( 14, 1)      5.30680 ( 14, 1)      5.57913 ( 14, 1)      5.60235 ( 14, 1)
 832400.0 /      4.68631 ( 14, 1)      5.07944 ( 14, 1)      5.30569 ( 14, 1)      5.31251 ( 14, 1)      5.13788 (344, 1)
 832350.0 /      4.85413 ( 14, 1)      5.04206 ( 14, 1)      5.03854 ( 14, 1)      4.86522 ( 14, 1)      5.00626 ( 53, 1)
 832300.0 /      4.81655 ( 11, 1)      4.78064 ( 14, 1)      4.62467 ( 11, 1)      5.15077 (239, 1)      5.80187 (239, 1)
 832250.0 /      5.69959 ( 11, 1)      5.86203 ( 11, 1)      6.13190 ( 11, 1)      6.47037 ( 11, 1)      6.94614 (211, 1)
 832200.0 /      6.12575 ( 11, 1)      5.91704 (364, 1)      6.51405C( 38, 1)      7.23256C( 38, 1)      7.71169C( 38, 1)
 832150.0 /      5.63695C( 38, 1)      5.83941C( 38, 1)      6.19022 (334, 1)      7.14670 (334, 1)      7.30892 (334, 1)
 832100.0 /      5.71026 (334, 1)      6.36103 (334, 1)      6.92608 (334, 1)      6.61081 (334, 1)      6.58036 ( 44, 1)
 832050.0 /      6.44860 (334, 1)      6.10387 (334, 1)      6.18150 (334, 1)      6.18458 ( 70, 1)      6.73015 ( 14, 1)
 832000.0 /      5.46664 (334, 1)      5.54226 (334, 1)      5.74384 ( 70, 1)      6.01681 ( 14, 1)      6.26552 (361, 1)
                                                                                                                 HIGH
                                                                                                                 24-HR
                                                                                                                 SGROU

                     *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                  ***


                   * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)        *
                                              * FROM ALL SOURCES *
                                             * FOR THE RECEPTOR GRID *

                 * MAXIMUM VALUE EQUALS      23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                               X-AXIS (METERS)
(METERS)  /          817250.0              817300.0           817350.0              817400.0              817450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      5.80987 (318, 1)      6.22822 (318, 1)      6.61927 (318, 1)      6.93494 (318, 1)      7.10796 (318, 1)
 833450.0 /      5.60610 ( 99, 1)      6.01379 ( 99, 1)      6.44459 ( 99, 1)      6.91116 (291, 1)      6.41029 ( 99, 1)
 833400.0 /      5.14717C(126, 1)      5.56022C(126, 1)      6.03810C(126, 1)      6.59244C(126, 1)      6.63790C(126, 1)
 833350.0 /      6.33780 (315, 1)      6.82133 (315, 1)      7.29234 (315, 1)      7.77951 (315, 1)      7.74269C(126, 1)
 833300.0 /      6.75276 ( 11, 1)      7.22148 ( 11, 1)      7.72895 ( 11, 1)      8.29873 ( 11, 1)      7.61765 ( 11, 1)
 833250.0 /      8.18923 ( 11, 1)      8.85435 ( 11, 1)      9.60598 ( 11, 1)     10.46274 ( 11, 1)      9.07243 ( 11, 1)
 833200.0 /      7.95914 ( 11, 1)      8.22593 ( 11, 1)      8.53889 ( 11, 1)      8.87986C( 38, 1)      8.45877C( 38, 1)
 833150.0 /      7.28013 (364, 1)      7.77886 (364, 1)      8.04998 (364, 1)      8.10034C( 38, 1)      7.31091C( 38, 1)
 833100.0 /      6.93114 (336, 1)      7.13846 (336, 1)      7.45180 (334, 1)      8.02155 (151, 1)      7.80671 (151, 1)
 833050.0 /      6.97605 (334, 1)      7.46897 (334, 1)      7.70960 (334, 1)      8.09284 (335, 1)      7.25856 (335, 1)
 833000.0 /      7.29731 (334, 1)      7.37856 (334, 1)      7.48149 (335, 1)      7.57246 (335, 1)      6.27176 (335, 1)
 832950.0 /      6.74077 (334, 1)      6.42091 (335, 1)      6.59889C( 30, 1)      7.00519C( 30, 1)      6.62836C( 30, 1)
 832900.0 /      6.67697C( 30, 1)      7.10375C( 30, 1)      7.53191C( 30, 1)      8.00885C( 30, 1)      7.13105C( 30, 1)
 832850.0 /      7.47325C( 30, 1)      7.73671C( 30, 1)      7.80376C( 30, 1)      7.63416C( 30, 1)      6.50552 ( 15, 1)
 832800.0 /      7.57061C( 30, 1)      7.30479C( 30, 1)      6.89494C( 30, 1)      6.61474C( 30, 1)      5.98803C( 30, 1)
 832750.0 /      6.63476C( 30, 1)      6.19145C( 30, 1)      6.02669C( 30, 1)      6.25716 (361, 1)      6.29826 ( 14, 1)
 832700.0 /      5.80308 (364, 1)      5.65461 (364, 1)      6.19240 ( 14, 1)      6.84644 ( 14, 1)      6.54670 ( 14, 1)
 832650.0 /      5.34029 (364, 1)      6.09211 ( 14, 1)      6.64942 ( 14, 1)      6.88532 ( 14, 1)      6.24488 ( 14, 1)
 832600.0 /      5.93633 ( 14, 1)      6.40589 ( 14, 1)      6.55303 ( 14, 1)      6.43282 ( 14, 1)      5.72422 ( 14, 1)
 832550.0 /      6.13733 ( 14, 1)      6.22517 ( 14, 1)      6.05894 ( 14, 1)      5.82939 ( 14, 1)      5.30257 ( 14, 1)
 832500.0 /      5.90718 ( 14, 1)      5.72070 ( 14, 1)      5.46627 ( 14, 1)      5.34999 ( 14, 1)      5.02996 ( 14, 1)
 832450.0 /      5.41187 ( 14, 1)      5.15000 ( 14, 1)      4.99411 ( 14, 1)      5.03520 ( 14, 1)      4.95640 (104, 1)
 832400.0 /      5.42929 (140, 1)      4.69082 ( 14, 1)      4.67424 ( 14, 1)      4.93680 (104, 1)      4.75830 ( 56, 1)
 832350.0 /      5.06271 ( 53, 1)      5.31556 (202, 1)      4.98342 ( 11, 1)      4.64368 ( 56, 1)      4.43980 ( 56, 1)
 832300.0 /      5.60949 (239, 1)      4.95379C(171, 1)      5.29307 (202, 1)      4.77865C(317, 1)      4.26523 (279, 1)
 832250.0 /      7.59932 (211, 1)      7.56289 (211, 1)      6.93772 (279, 1)      5.04327 (279, 1)      4.97853 (279, 1)
 832200.0 /      7.28182 (151, 1)      7.44361 (238, 1)      6.06243 ( 70, 1)      5.26203C( 38, 1)      4.72356C( 38, 1)
 832150.0 /      7.27843C( 38, 1)      7.23315 ( 70, 1)      8.14091 (255, 1)      6.28873 (303, 1)      5.10927 ( 34, 1)
 832100.0 /      7.22252 ( 14, 1)      8.33486 (255, 1)      7.41631 ( 34, 1)      5.75572C( 48, 1)      5.10334 (334, 1)
 832050.0 /      7.26644 (361, 1)      6.82187 ( 56, 1)      7.48382 ( 73, 1)      6.13972 ( 58, 1)      5.17497 ( 34, 1)
 832000.0 /      6.11053 ( 56, 1)      6.20990 ( 56, 1)      6.44273 (341, 1)      5.96164 (341, 1)      6.52932C( 30, 1)
                                                                                                                 HIGH
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                                                                                                     24-HR
                                                                                                     SGROUP
                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***


                     * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                           * FROM ALL SOURCES *
                                         * FOR THE RECEPTOR GRID *

                  * MAXIMUM VALUE EQUALS     23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                             X-AXIS (METERS)
(METERS)  /         817500.0            817550.0           817600.0            817650.0            817700.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     7.05689 (318, 1)    6.92304 ( 65, 1)    8.10290C(212, 1)    8.85686 (276, 1)    9.94315 (276, 1)
 833450.0 /     6.69957 ( 99, 1)    7.17622 (206, 1)    7.84783 (206, 1)    8.29281 (206, 1)    8.79277 (276, 1)
 833400.0 /     7.28462C(126, 1)    8.05295C(126, 1)    8.98347C(126, 1)   10.09534C(126, 1)   11.25009C(126, 1)
 833350.0 /     8.74563C(126, 1)    9.96983C(126, 1)   11.37551C(126, 1)   12.72944C(126, 1)   13.48635C(126, 1)
 833300.0 /     8.17029 ( 11, 1)    8.87199 ( 11, 1)    9.64721 ( 11, 1)   10.11757 ( 11, 1)    9.88338 ( 11, 1)
 833250.0 /     9.59053 ( 11, 1)    9.79161 ( 11, 1)    9.92974C( 38, 1)   10.52153C( 38, 1)   10.67887C( 38, 1)
 833200.0 /     8.84494C( 38, 1)    9.11614C( 38, 1)    9.18207C( 38, 1)    8.81311C( 38, 1)   10.12655 (151, 1)
 833150.0 /     7.90337 (151, 1)    8.84574 (151, 1)    9.50677 (151, 1)    9.67661 (151, 1)    9.75025C( 48, 1)
 833100.0 /     7.96692 (151, 1)    7.97787C( 48, 1)    8.16032C( 48, 1)    8.14874C( 48, 1)    7.41669C( 48, 1)
 833050.0 /     7.30085 (335, 1)    6.93289 (335, 1)    6.83581 (364, 1)    7.58305C( 30, 1)    8.94910C( 30, 1)
 833000.0 /     6.27801 ( 34, 1)    7.11052 (364, 1)    8.05207C( 30, 1)    8.84787 ( 15, 1)    8.50262 ( 15, 1)
 832950.0 /     7.30956C( 30, 1)    8.04240 ( 15, 1)    8.30556 ( 15, 1)    7.51709C( 30, 1)    7.90261C( 30, 1)
 832900.0 /     7.41829 ( 15, 1)    7.28983 ( 15, 1)    7.03520C( 30, 1)    7.60447 (361, 1)    8.35109 ( 14, 1)
 832850.0 /     6.35606C( 30, 1)    6.70401C( 30, 1)    7.32439 (361, 1)    7.94925 ( 14, 1)    8.48295 ( 14, 1)
 832800.0 /     6.44315 (361, 1)    6.95327 ( 14, 1)    7.49549 ( 14, 1)    7.81599 ( 14, 1)    8.11576 ( 14, 1)
 832750.0 /     6.77896 ( 14, 1)    7.04538 ( 14, 1)    7.18556 ( 14, 1)    7.43720 ( 14, 1)    8.08541 (104, 1)
 832700.0 /     6.62164 ( 14, 1)    6.61902 ( 14, 1)    6.79539 ( 14, 1)    7.25783 ( 56, 1)    7.40127 ( 56, 1)
 832650.0 /     6.12875 ( 14, 1)    6.21263 ( 14, 1)    6.53700 ( 56, 1)    7.01757 ( 56, 1)    6.32774 ( 56, 1)
 832600.0 /     5.71706 ( 14, 1)    5.93209 ( 14, 1)    6.51235 ( 56, 1)    6.18974 ( 56, 1)    5.40115 ( 56, 1)
 832550.0 /     5.44995 ( 14, 1)    5.95562 ( 56, 1)    5.92551 ( 56, 1)    5.34049 ( 56, 1)    4.86541 ( 56, 1)
 832500.0 /     5.39505 ( 56, 1)    5.57662 ( 56, 1)    5.57048 (311, 1)    6.22932 (311, 1)    4.94339 (311, 1)
 832450.0 /     5.17582 ( 56, 1)    5.00536 ( 56, 1)    5.91904 (311, 1)    5.43446 (311, 1)    4.74724 (341, 1)
 832400.0 /     4.74091 ( 56, 1)    4.90565 (311, 1)    5.20698 (311, 1)    4.74599C(171, 1)    5.22639C(171, 1)
 832350.0 /     4.30900 (211, 1)    4.43555 (211, 1)    4.55168 (318, 1)    4.86363 (318, 1)    5.14367 (318, 1)
 832300.0 /     4.72249 (279, 1)    5.19682 (279, 1)    5.64780 (279, 1)    6.01921 (279, 1)    6.25138 (279, 1)
 832250.0 /     5.35000 (279, 1)    5.66878 (279, 1)    5.88935 (279, 1)    5.97250 (279, 1)    5.89662 (279, 1)
 832200.0 /     4.90103 ( 34, 1)    5.48011 ( 34, 1)    5.90596 ( 34, 1)    5.90328 (151, 1)    6.14715 (151, 1)
 832150.0 /     5.51821 ( 34, 1)    5.68592 ( 34, 1)    5.73812 (334, 1)    5.88146C( 48, 1)    5.97590C( 48, 1)
 832100.0 /     5.26787 ( 34, 1)    5.64371 ( 34, 1)    5.62851C( 30, 1)    6.60370C( 30, 1)    7.14561C( 30, 1)
 832050.0 /     5.52001 ( 34, 1)    6.00206C( 30, 1)    6.62024C( 30, 1)    6.86491C( 30, 1)    8.64004 ( 19, 1)
 832000.0 /     7.29194C( 30, 1)    7.80474C( 30, 1)    8.10960C( 30, 1)    8.26618 ( 19, 1)   11.03826 ( 19, 1)
                                                                                                     HIGH
                                                                                                     24-HR
                                                                                                     SGROUP
                    *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***


                     * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                           * FROM ALL SOURCES *
                                         * FOR THE RECEPTOR GRID *

                  * MAXIMUM VALUE EQUALS     23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                             X-AXIS (METERS)
(METERS)  /         817750.0            817800.0           817850.0            817900.0            817950.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /    10.87364 (276, 1)   11.44033 (206, 1)   13.35735 (205, 1)   17.68880 (205, 1)   20.15794 (205, 1)
 833450.0 /     9.83665 (276, 1)   10.70866 (276, 1)   10.97739 (276, 1)   11.57051C(171, 1)   12.26422 (289, 1)
 833400.0 /    11.84918C(126, 1)   10.74152C(126, 1)   10.79116C(171, 1)   10.91056C(171, 1)   11.23803 (241, 1)
 833350.0 /    12.99527C(126, 1)   11.34730C(126, 1)   10.43799C(171, 1)   10.70550C(171, 1)   10.95043C(171, 1)
 833300.0 /     9.76448C(196, 1)   10.10823 (279, 1)   12.37061 (279, 1)   14.74092 (279, 1)   14.74389 (279, 1)
 833250.0 /    10.44810C( 38, 1)   10.66113 (279, 1)   11.11546 (279, 1)   12.23825 (151, 1)   12.72235 (151, 1)
 833200.0 /    11.25081 (151, 1)   11.65830 (151, 1)   10.94072 (151, 1)    9.48270 (151, 1)   11.80012C(126, 1)
 833150.0 /     9.49165C( 48, 1)    9.15045 ( 34, 1)   10.51414 ( 34, 1)   11.24576C(126, 1)   12.15158 (148, 1)
 833100.0 /     8.59699 ( 34, 1)    9.68999 ( 15, 1)    9.65167 (148, 1)    9.78863 (148, 1)   10.07533 (256, 1)
 833050.0 /     9.58258 ( 15, 1)    8.78880C( 30, 1)    9.21936 ( 19, 1)   10.77625 ( 14, 1)   12.73666 (104, 1)
 833000.0 /     8.37659C( 30, 1)    8.49659 ( 14, 1)   10.39592 ( 14, 1)   11.83597 (104, 1)   13.18502 (104, 1)
 832950.0 /     8.58926 ( 14, 1)    9.77330 ( 14, 1)   10.73556 ( 14, 1)   12.41452 (104, 1)   10.53630 (103, 1)
 832900.0 /     9.14155 ( 14, 1)    9.70379 ( 14, 1)   11.32838 (104, 1)    9.83851 (104, 1)    9.12148 (103, 1)
 832850.0 /     8.84497 ( 14, 1)   10.16598 (104, 1)    9.34703 (104, 1)    8.30390 (103, 1)    8.82537C(271, 1)
 832800.0 /     9.06624 (104, 1)    8.72782 (104, 1)    7.37537 (103, 1)    7.19392 (103, 1)    8.71233C(271, 1)
 832750.0 /     8.05732 (104, 1)    6.68857 (255, 1)    6.60805 (103, 1)    7.18934C(271, 1)    8.86736 ( 19, 1)
 832700.0 /     6.32978 (104, 1)    5.94052 (103, 1)    5.94094 ( 56, 1)    7.20409 ( 56, 1)    9.67801 ( 19, 1)
 832650.0 /     5.41991 ( 56, 1)    5.33902 ( 56, 1)    6.20634 ( 56, 1)    7.70348 ( 19, 1)    9.81618 ( 19, 1)
 832600.0 /     5.48229 (205, 1)    5.45273 ( 56, 1)    6.28232 ( 56, 1)    8.31884 ( 19, 1)    9.46107 ( 19, 1)
 832550.0 /     4.95761 ( 56, 1)    5.56789 ( 56, 1)    6.60945 ( 19, 1)    8.48326 ( 19, 1)    8.86154 ( 19, 1)
 832500.0 /     5.00497 ( 56, 1)    5.53979 ( 56, 1)    7.09454 ( 19, 1)    8.28354 ( 19, 1)    8.20836 ( 19, 1)
 832450.0 /     5.02743 ( 56, 1)    5.68425 ( 19, 1)    7.27851 ( 19, 1)    7.88163 ( 19, 1)    7.63345 ( 19, 1)
 832400.0 /     5.62626C(171, 1)    6.09399 ( 19, 1)    7.22889 ( 19, 1)    7.45722 ( 19, 1)    7.24382 ( 19, 1)
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  832350.0 /      5.26097 (318, 1)      6.34326 ( 19, 1)      7.08428 ( 19, 1)      7.16072 ( 19, 1)      7.07008 ( 19, 1)
  832300.0 /      6.29867 (279, 1)      6.48981 ( 19, 1)      6.95944 ( 19, 1)      7.01259 ( 19, 1)      7.06595 ( 19, 1)
  832250.0 /      5.96235 (238, 1)      6.59242 ( 19, 1)      7.25005 (151, 1)      7.34141 ( 19, 1)      8.14274 (148, 1)
  832200.0 /      6.74142C( 48, 1)      6.90360 ( 19, 1)      8.06091 (148, 1)      8.89859 ( 19, 1)      8.65064 (256, 1)
  832150.0 /      7.14770C( 30, 1)      8.41666 ( 19, 1)      9.54303 ( 19, 1)      8.84028 (256, 1)      8.46936 (104, 1)
  832100.0 /      8.73899 ( 19, 1)      9.52297 ( 19, 1)      8.92442 ( 14, 1)      9.37004 (256, 1)      8.81231 (104, 1)
  832050.0 /      9.21887 ( 19, 1)      9.10776 ( 14, 1)      9.38135 (256, 1)      8.43608 (103, 1)      9.66370 ( 19, 1)
  832000.0 /     14.52252 ( 14, 1)     21.61723 ( 14, 1)     21.03756 (104, 1)     17.57234 ( 56, 1)     16.72763 ( 19, 1)
                                                                                                                       HIGH
                                                                                                                       24-HR
                                                                                                                       SGROUP
                          *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                        * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                 * FROM ALL SOURCES *
                                               * FOR THE RECEPTOR GRID *

                      * MAXIMUM VALUE EQUALS     23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

   Y-AXIS   /                                                X-AXIS (METERS)
  (METERS)  /          818000.0                818050.0              818100.0              818150.0              818200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     18.58838C(198, 1)     18.90885C(198, 1)     18.90081 (227, 1)     13.72793 (173, 1)     15.73751 (130, 1)
  833450.0 /     14.61192 (205, 1)     14.27195 (205, 1)     12.18315C(198, 1)      8.71568C(198, 1)      4.07851 (130, 1)
  833400.0 /     12.89066 (289, 1)     13.38530 (289, 1)      9.34551 (289, 1)      5.05459 (251, 1)      4.22893 (213, 1)
  833350.0 /     10.59438C(171, 1)     10.07764C(258, 1)      7.63587C(258, 1)      5.52049 (251, 1)      5.18796 (213, 1)
  833300.0 /     12.52128C(258, 1)     11.95143C(258, 1)      9.41084 (214, 1)      5.89455 (251, 1)      4.70338 (213, 1)
  833250.0 /     11.70921 (206, 1)     11.85282C(126, 1)     11.02917 (148, 1)      5.58359 (251, 1)      5.71634 (251, 1)
  833200.0 /     13.43812 (148, 1)     12.62117 (148, 1)     10.03370 (256, 1)      8.90287 (104, 1)      7.77936 (251, 1)
  833150.0 /     10.35228 (148, 1)     13.22390 (256, 1)     11.76730 (104, 1)     11.12134 (104, 1)      9.33503 (303, 1)
  833100.0 /     13.48440 (256, 1)     13.62625 (103, 1)     11.98821C(271, 1)     10.90042 (104, 1)     10.90776C(271, 1)
  833050.0 /     13.36625 (104, 1)     12.00919C(271, 1)     11.13349C( 22, 1)     11.28114 ( 19, 1)     12.26350 ( 81, 1)
  833000.0 /     11.55280 (103, 1)     12.44396C(271, 1)     12.27355C( 22, 1)     12.41748 ( 19, 1)     12.77739 ( 81, 1)
  832950.0 /     10.69926C(271, 1)     10.84692C(271, 1)     12.14110C( 22, 1)     12.33833 ( 19, 1)     12.55995 ( 81, 1)
  832900.0 /     10.69440C(271, 1)     11.30459 ( 19, 1)     11.71633 ( 19, 1)     11.60022 ( 19, 1)     11.92711 ( 81, 1)
  832850.0 /      9.73513 ( 19, 1)     11.65299 ( 19, 1)     11.29220 ( 19, 1)     10.57856 ( 19, 1)     11.09811 ( 81, 1)
  832800.0 /     10.87934 ( 19, 1)     11.18220 ( 19, 1)     10.64068 ( 19, 1)      9.71065 ( 81, 1)     10.20798 ( 81, 1)
  832750.0 /     11.01719 ( 19, 1)     10.45734 ( 19, 1)      9.87542 ( 19, 1)      9.41405 ( 81, 1)      9.33232 ( 81, 1)
  832700.0 /     10.51140 ( 19, 1)      9.71150 ( 19, 1)      9.07154 ( 19, 1)      9.01755 ( 81, 1)      8.72636 (354, 1)
  832650.0 /      9.75994 ( 19, 1)      8.99959 ( 19, 1)      8.27891 ( 19, 1)      8.56510 ( 81, 1)      8.19848 (354, 1)
  832600.0 /      8.99197 ( 19, 1)      8.32571 ( 19, 1)      7.52865 ( 19, 1)      8.10820 ( 81, 1)      7.67801 (354, 1)
  832550.0 /      8.29353 ( 19, 1)      7.69728 ( 19, 1)      6.86037 ( 19, 1)      7.69306 ( 81, 1)      7.18151 (354, 1)
  832500.0 /      7.69522 ( 19, 1)      7.16555 ( 19, 1)      6.64534 ( 61, 1)      7.32532 ( 81, 1)      6.71446 (354, 1)
  832450.0 /      7.25455 ( 19, 1)      6.83633 ( 19, 1)      6.52510 ( 61, 1)      6.96824 ( 81, 1)      6.28289 (354, 1)
  832400.0 /      7.03256 ( 19, 1)      6.70770 ( 19, 1)      6.34497 ( 61, 1)      6.56848 ( 33, 1)      5.90875 (354, 1)
  832350.0 /      6.94352 ( 19, 1)      6.54669 ( 19, 1)      6.15212 ( 61, 1)      6.08299 ( 81, 1)      5.79093 ( 77, 1)
  832300.0 /      6.92663 ( 19, 1)      6.13750 ( 19, 1)      6.35466 ( 61, 1)      5.84847 ( 61, 1)      5.58766 (354, 1)
  832250.0 /      6.39730 ( 19, 1)      6.37950 ( 19, 1)      6.83905 ( 61, 1)      5.81085 ( 81, 1)      5.88173 (354, 1)
  832200.0 /      8.15903 (104, 1)      7.26985 ( 61, 1)      7.22397 ( 61, 1)      6.07152 (354, 1)      6.46703 (354, 1)
  832150.0 /      9.53308 ( 19, 1)      7.77915 ( 61, 1)      7.88267 ( 61, 1)      6.89278C(271, 1)      6.89432 (354, 1)
  832100.0 /      9.73144 ( 19, 1)      8.26667 ( 61, 1)      8.19553 ( 81, 1)      7.30348C(271, 1)      7.07039 (354, 1)
  832050.0 /      9.39319 ( 19, 1)      8.38183 ( 61, 1)      8.45990 ( 81, 1)      7.54403C(271, 1)      7.08242 (354, 1)
  832000.0 /     11.28747 ( 61, 1)     13.92176 ( 61, 1)     19.05862 (347, 1)     23.06605 ( 61, 1)     18.19525C( 21, 1)
                                                                                                                       HIGH
                                                                                                                       24-HR
                                                                                                                       SGROU
                          *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                             ***


                        * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                 * FROM ALL SOURCES *
                                               * FOR THE RECEPTOR GRID *

                      * MAXIMUM VALUE EQUALS     23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

   Y-AXIS   /                                                X-AXIS (METERS)
  (METERS)  /          818250.0                818300.0              818350.0              818400.0              818450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     10.37073 (166, 1)      9.02757C(219, 1)     14.06189C(170, 1)     16.27357C(170, 1)     16.72665 (134, 1)
  833450.0 /      4.53955C( 92, 1)      5.73035C(170, 1)     12.21465C(170, 1)     16.60667 (182, 1)     18.91303 (182, 1)
  833400.0 /      4.48928 (131, 1)      4.66065C( 92, 1)     15.54505 (182, 1)     15.62292 (182, 1)     10.52029 (182, 1)
  833350.0 /      4.20732 (131, 1)      4.35207 (131, 1)      6.49733 (131, 1)      6.93177 (131, 1)      7.05588 (149, 1)
  833300.0 /      4.59399 (213, 1)      4.11494 (131, 1)      8.17036 (149, 1)      9.84481C(234, 1)      9.76744C(234, 1)
  833250.0 /      5.71380 (213, 1)      6.37729 (131, 1)      7.79945C( 92, 1)     11.82934 (149, 1)     10.75224 (149, 1)
  833200.0 /      9.25738 (251, 1)     10.09646 (213, 1)      9.92748 (131, 1)      9.33361C( 92, 1)     11.42168 (149, 1)
  833150.0 /     11.31299 (299, 1)     11.75136 (213, 1)      9.78195 (131, 1)      9.11138 (131, 1)      9.69418 (260, 1)
  833100.0 /     11.99233 (299, 1)     11.34484 (251, 1)     11.58871 (213, 1)      8.91692 (131, 1)      9.87202 ( 72, 1)
  833050.0 /     11.54503 (299, 1)     10.66645 (251, 1)     11.10914 (213, 1)      9.31223 ( 42, 1)      7.97443 ( 77, 1)
  833000.0 /     10.92814C( 21, 1)     12.22682C( 21, 1)      9.20596 (213, 1)      9.60451 (213, 1)      8.70165 ( 42, 1)
  832950.0 /     10.74692C( 21, 1)     12.96311C( 21, 1)      8.61200 (340, 1)      9.20132 (213, 1)      8.91245 ( 42, 1)
  832900.0 /     10.32156C( 21, 1)     12.92957C( 21, 1)      9.74324 (340, 1)      8.12249 (213, 1)      8.20189 ( 42, 1)
  832850.0 /      9.82988 (354, 1)     12.43598C( 21, 1)     10.32516 (340, 1)      7.04451 (213, 1)      7.49189 (213, 1)
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 832800.0 /      9.35376 (354, 1)     11.71495C( 21, 1)     10.53422 (340, 1)      7.69091 (340, 1)      7.03982C( 97, 1)
 832750.0 /      8.81174 (354, 1)     10.91098C( 21, 1)     10.45262 (340, 1)      8.20829 (340, 1)      6.72195C( 97, 1)
 832700.0 /      8.24960 (354, 1)     10.10338C( 21, 1)     10.14042 (340, 1)      8.50038 (340, 1)      6.21802C( 97, 1)
 832650.0 /      7.69529 (354, 1)      9.33126C( 21, 1)      9.64893 (340, 1)      8.65374 (340, 1)      6.57233C(310, 1)
 832600.0 /      7.16626 (354, 1)      8.61149C( 21, 1)      9.04398 (340, 1)      8.73657 (340, 1)      6.75287C(310, 1)
 832550.0 /      6.67214 (354, 1)      7.94937C( 21, 1)      8.49331C( 21, 1)      8.82545 (340, 1)      6.93724 (340, 1)
 832500.0 /      6.21594 (354, 1)      7.34708C( 21, 1)      7.99471C( 21, 1)      8.80765 (340, 1)      7.05395 (340, 1)
 832450.0 /      5.81695 (354, 1)      6.80015C( 21, 1)      7.50430C( 21, 1)      8.58916 (340, 1)      7.11087 (340, 1)
 832400.0 /      5.54522 (354, 1)      6.29905C( 21, 1)      7.03392C( 21, 1)      8.26964 (340, 1)      7.09855 (340, 1)
 832350.0 /      6.30973 ( 77, 1)      5.84373C( 21, 1)      6.59041C( 21, 1)      7.86177 (340, 1)      7.01109 (340, 1)
 832300.0 /      5.55984 (354, 1)      5.75914 (354, 1)      6.18152C( 21, 1)      7.36242 (340, 1)      6.89216 (340, 1)
 832250.0 /      5.69565C( 22, 1)      5.54403 (354, 1)      5.80632C( 21, 1)      6.84179 (340, 1)      6.75830 (340, 1)
 832200.0 /      5.49263 (354, 1)      5.34182C( 21, 1)      6.25549C(353, 1)      6.34961 (340, 1)      6.60377 (340, 1)
 832150.0 /      5.54215 (354, 1)      5.15043C( 21, 1)      5.73294C( 21, 1)      6.80543C(353, 1)      6.42810 (340, 1)
 832100.0 /      5.82792 (354, 1)      5.04573C(271, 1)      5.71208C( 21, 1)      6.22067C(353, 1)      6.59320C(353, 1)
 832050.0 /      6.21846 (354, 1)      5.01482C(271, 1)      5.33560C( 21, 1)      5.70997C( 21, 1)      6.30783 (340, 1)
 832000.0 /     17.51323 (354, 1)     11.17515C( 20, 1)      9.90019C( 20, 1)      9.98884 (340, 1)     11.82234 (340, 1)
                                                                                                                      HIGH
                                                                                                                      24-HR
                                                                                                                      SGROUP
                                 *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***

                              * HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                      * FROM ALL SOURCES *
                                                    * FOR THE RECEPTOR GRID *

                          * MAXIMUM VALUE EQUALS     23.06605 AND OCCURRED AT (  818150.0,  832000.0) *

 Y-AXIS   /                                                     X-AXIS (METERS)
(METERS)  /          818500.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /     17.29711 (182, 1)
 833450.0 /     14.36626 (182, 1)
 833400.0 /      9.69313 ( 77, 1)
 833350.0 /      8.10520C(107, 1)
 833300.0 /      9.21945 (230, 1)
 833250.0 /      9.30442C(135, 1)
 833200.0 /     10.89271 (149, 1)
 833150.0 /     11.10738 ( 50, 1)
 833100.0 /     10.37928 (260, 1)
 833050.0 /     10.17514 ( 72, 1)
 833000.0 /      7.89094C(360, 1)
 832950.0 /      8.01698C(360, 1)
 832900.0 /      6.54136C( 20, 1)
 832850.0 /      6.56534C( 20, 1)
 832800.0 /      5.97719C( 20, 1)
 832750.0 /      6.69113C( 97, 1)
 832700.0 /      7.33187C( 97, 1)
 832650.0 /      6.86730C( 97, 1)
 832600.0 /      6.55442 (252, 1)
 832550.0 /      6.22166 (182, 1)
 832500.0 /      6.13719C(265, 1)
 832450.0 /      6.01520C(265, 1)
 832400.0 /      5.38001 (340, 1)
 832350.0 /      5.62446C(310, 1)
 832300.0 /      5.66816C(310, 1)
 832250.0 /      5.50386 (340, 1)
 832200.0 /      5.56800 (340, 1)
 832150.0 /      5.63629 (340, 1)
 832100.0 /      5.70386 (340, 1)
 832050.0 /      5.80266 (340, 1)
 832000.0 /     10.62227C(360, 1)
                                                                                                                      2ND HI
                                                                                                                      24-HR
                                                                                                                      SGROUP
                                 *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                              ***

                           * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                      * FROM ALL SOURCES *
                                                    * FOR THE RECEPTOR GRID *

                          * MAXIMUM VALUE EQUALS     19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

 Y-AXIS   /                                                     X-AXIS (METERS)
(METERS)  /          817000.0              817050.0              817100.0              817150.0              817200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /      4.23854 ( 11, 1)      4.37128 ( 11, 1)      4.64711 (318, 1)      5.00696 (318, 1)      5.32352 ( 99, 1)
 833450.0 /      4.26815C(275, 1)      4.39193C(275, 1)      4.52751C(275, 1)      4.75796 ( 65, 1)      5.09644 ( 65, 1)
 833400.0 /      4.09115C(275, 1)      4.17232C(275, 1)      4.27934C(275, 1)      4.43212 ( 11, 1)      4.58385 ( 11, 1)
 833350.0 /      4.36564 (331, 1)      4.64405 (315, 1)      4.93600 (331, 1)      5.22831 (331, 1)      5.51733 (331, 1)
 833300.0 /      4.82973 ( 11, 1)      5.16208 ( 11, 1)      5.52397 ( 11, 1)      5.91043 ( 11, 1)      6.28681 (331, 1)
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 833250.0 /       5.00691C(317, 1)     5.29095C(317, 1)     5.53558C(317, 1)     5.71066C(317, 1)     5.79484C(317, 1)
 833200.0 /       4.57916C( 38, 1)     4.74007C( 38, 1)     4.95267C( 38, 1)     5.25588C( 38, 1)     5.69300C( 38, 1)
 833150.0 /       4.69737C( 38, 1)     4.92380C( 38, 1)     5.29265 (364, 1)     5.64302C( 38, 1)     6.14810C( 38, 1)
 833100.0 /       4.62778 (334, 1)     5.20225 ( 34, 1)     5.73131 ( 34, 1)     6.12491 ( 34, 1)     6.37495 (336, 1)
 833050.0 /       4.87039 (364, 1)     5.27468 (336, 1)     5.87523 (336, 1)     6.02841 ( 34, 1)     6.31229 (334, 1)
 833000.0 /       5.23005 (336, 1)     5.29589 (334, 1)     5.64416 (335, 1)     6.05754 (335, 1)     6.45571 (335, 1)
 832950.0 /       5.32278 (334, 1)     5.76959 (335, 1)     6.05943 (335, 1)     6.27901 (335, 1)     6.41316 (335, 1)
 832900.0 /       5.64671 (335, 1)     5.75111 (335, 1)     5.75595 (335, 1)     5.67744 (335, 1)     5.78109 (334, 1)
 832850.0 /       5.26328 (335, 1)     5.14338C( 30, 1)     5.22369 (334, 1)     4.85503 (335, 1)     4.82100 (335, 1)
 832800.0 /       4.78947 (334, 1)     4.48211 (335, 1)     4.44592 (335, 1)     4.48262 (335, 1)     4.94156 (364, 1)
 832750.0 /       4.15838 (335, 1)     4.59078C(314, 1)     4.60357C(314, 1)     4.84069 (364, 1)     5.35083 (364, 1)
 832700.0 /       4.47345C(314, 1)     4.40644 (364, 1)     4.77389 (364, 1)     5.20552 (364, 1)     5.60058 (364, 1)
 832650.0 /       4.59042 ( 15, 1)     4.74850 (364, 1)     5.10715 (364, 1)     5.25234C( 30, 1)     4.97999C( 30, 1)
 832600.0 /       4.71589 ( 15, 1)     4.94764 (364, 1)     4.71706C( 30, 1)     4.54617C( 30, 1)     5.00524 (361, 1)
 832550.0 /       4.61351C( 30, 1)     4.33249 ( 15, 1)     4.46870 ( 14, 1)     4.83385 (361, 1)     5.35854 (361, 1)
 832500.0 /       3.95398C( 30, 1)     4.31496 (364, 1)     4.63806 (361, 1)     5.06501 (361, 1)     5.14273 (361, 1)
 832450.0 /       3.86735 (364, 1)     4.42850 (361, 1)     4.77382 (361, 1)     4.81355 (361, 1)     4.73415C( 48, 1)
 832400.0 /       4.29573 ( 11, 1)     4.49182 (361, 1)     4.50691 (361, 1)     4.30617 (361, 1)     5.12786 ( 14, 1)
 832350.0 /       4.49843C(126, 1)     4.50956C(317, 1)     4.48337 ( 11, 1)     4.16171 (331, 1)     4.61908 ( 14, 1)
 832300.0 /       4.79052 ( 14, 1)     4.70167 ( 11, 1)     4.62138 ( 14, 1)     4.99435 ( 99, 1)     5.17795 ( 99, 1)
 832250.0 /       5.38214C(317, 1)     5.42018C(317, 1)     5.58388 (211, 1)     6.22136 (211, 1)     6.79513 (318, 1)
 832200.0 /       5.36274 (364, 1)     5.87309C( 38, 1)     6.37566 (364, 1)     6.50772 (364, 1)     6.51440 (257, 1)
 832150.0 /       5.22312 (364, 1)     5.37829 ( 34, 1)     6.08810 (151, 1)     6.41943 ( 34, 1)     7.04999 ( 34, 1)
 832100.0 /       5.53340 ( 34, 1)     6.16360 ( 34, 1)     6.19126 ( 34, 1)     6.15820 ( 34, 1)     6.56962 (334, 1)
 832050.0 /       5.35087 ( 34, 1)     5.34979 ( 34, 1)     5.75487C( 30, 1)     6.00648 ( 44, 1)     6.31477 ( 70, 1)
 832000.0 /       5.09382C( 30, 1)     5.33617 ( 44, 1)     5.30880 ( 44, 1)     5.66110 ( 70, 1)     6.03900 ( 56, 1)
                                                                                                                  2ND H
                                                                                                                  24-HR
                                                                                                                  SGROUP

                                  *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***


                              * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                        * FROM ALL SOURCES *
                                                     * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS      19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

 Y-AXIS   /                                             X-AXIS (METERS)
(METERS)  /            817250.0             817300.0             817350.0             817400.0             817450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 833500.0 /       5.53583 ( 99, 1)     5.74224 ( 99, 1)     5.89849 ( 99, 1)     6.10379 ( 65, 1)     6.50106 ( 65, 1)
 833450.0 /       5.40133 ( 65, 1)     5.78571 (291, 1)     6.34840 (291, 1)     6.89179 ( 99, 1)     6.29528 (291, 1)
 833400.0 /       4.78499C(275, 1)     5.05241C(275, 1)     5.38640C(275, 1)     5.79912C(275, 1)     5.68352C(275, 1)
 833350.0 /       5.82419 (331, 1)     6.17575 (331, 1)     6.77106C(126, 1)     7.53323C(126, 1)     6.95076 (315, 1)
 833300.0 /       6.56535 (331, 1)     6.83182 (331, 1)     7.10741 (331, 1)     7.59520 (315, 1)     6.99902 (315, 1)
 833250.0 /       5.78026C(317, 1)     5.69522C(317, 1)     6.31986 (315, 1)     7.17945C( 38, 1)     7.41168C( 38, 1)
 833200.0 /       6.29890C( 38, 1)     7.08824C( 38, 1)     7.98986C( 38, 1)     8.87264 ( 11, 1)     7.31936 (364, 1)
 833150.0 /       6.71587C( 38, 1)     7.28933C( 38, 1)     7.76535C( 38, 1)     7.95185 (364, 1)     6.86828 (151, 1)
 833100.0 /       6.39224 (364, 1)     6.74019 (334, 1)     7.23372 (151, 1)     7.84817 (334, 1)     6.92809 (334, 1)
 833050.0 /       6.43160 (151, 1)     6.82765 (151, 1)     7.38207 (335, 1)     7.79856 (334, 1)     7.04686C( 48, 1)
 833000.0 /       6.83850 (335, 1)     7.19391 (335, 1)     7.32083 (334, 1)     7.15853 (334, 1)     6.01458 (334, 1)
 832950.0 /       6.45839 (335, 1)     6.41667 (334, 1)     6.31957 (335, 1)     6.24214 ( 34, 1)     6.26182 (364, 1)
 832900.0 /       5.46140 (335, 1)     5.39657 (335, 1)     5.90706 (364, 1)     6.88963 (364, 1)     6.85187 ( 15, 1)
 832850.0 /       5.01482 (364, 1)     5.76142 (364, 1)     6.52241 (364, 1)     7.16613 ( 15, 1)     6.39873C( 30, 1)
 832800.0 /       5.55580 (364, 1)     6.15959 (364, 1)     6.57943 ( 15, 1)     6.49685 (364, 1)     5.63144 (361, 1)
 832750.0 /       5.83685 (364, 1)     6.12006 (364, 1)     6.01316 (364, 1)     6.24740C( 30, 1)     6.25120 (361, 1)
 832700.0 /       5.53911C( 30, 1)     5.48723C( 30, 1)     6.11909 (361, 1)     6.60246 (361, 1)     5.99423 (361, 1)
 832650.0 /       5.32739 ( 14, 1)     5.90470 (361, 1)     6.23400 (361, 1)     6.13227 (361, 1)     5.28140 (361, 1)
 832600.0 /       5.64372 (361, 1)     5.85923 (361, 1)     5.68356 (361, 1)     5.36476 (361, 1)     4.72901 (361, 1)
 832550.0 /       5.49271 (361, 1)     5.28191 (361, 1)     4.96630 (361, 1)     4.82877 (361, 1)     4.53415 (104, 1)
 832500.0 /       4.95207C( 48, 1)     4.77986C( 48, 1)     4.49445 (361, 1)     4.64001 (361, 1)     4.95336 (104, 1)
 832450.0 /       4.65751C( 48, 1)     4.40912C( 48, 1)     4.44299 ( 43, 1)     4.89697 (104, 1)     4.86156 ( 56, 1)
 832400.0 /       4.87015 ( 14, 1)     4.27189 ( 43, 1)     4.56728 (104, 1)     4.75051 ( 14, 1)     4.53650 (104, 1)
 832350.0 /       5.05992 (202, 1)     5.15420C(198, 1)     4.60917 (104, 1)     4.56536 (104, 1)     4.16106 (211, 1)
 832300.0 /       5.34926 (158, 1)     4.72034C(196, 1)     4.59879 (205, 1)     4.49156 ( 11, 1)     4.12545C(317, 1)
 832250.0 /       7.45308 (318, 1)     7.50925 (318, 1)     5.75646 ( 65, 1)     4.76273C( 38, 1)     4.46907C( 38, 1)
 832200.0 /       6.96581 ( 49, 1)     7.07887 (154, 1)     5.74220 (151, 1)     5.13551 ( 34, 1)     4.72032 (279, 1)
 832150.0 /       6.86156 ( 70, 1)     6.62959 (256, 1)     7.44525 (256, 1)     5.67266 ( 34, 1)     4.94361 (151, 1)
 832100.0 /       6.98457 ( 70, 1)     8.16114 (256, 1)     7.08736 ( 56, 1)     5.72147 (334, 1)     4.90471 ( 34, 1)
 832050.0 /       6.97295 (256, 1)     6.68264 ( 34, 1)     6.59383 (341, 1)     5.60529 ( 81, 1)     4.87156 (341, 1)
 832000.0 /       5.94457 (255, 1)     6.20568 ( 34, 1)     6.03108 ( 73, 1)     5.92262 ( 58, 1)     6.08157 (266, 1)
                                                                                                                  2ND HI
                                                                                                                  24-HR
                                                                                                                  SGROU

                                  *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                          ***


                              * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)      *
                                                        * FROM ALL SOURCES *
                                                     * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS      19.82199 AND OCCURRED AT (  817950.0,  833500.0) *
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  Y-AXIS    /                                              X-AXIS (METERS)
 (METERS)   /        817500.0            817550.0            817600.0            817650.0            817700.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /      6.80569 ( 65, 1)    6.89852 (276, 1)    7.81805 (276, 1)    8.59447C(212, 1)    8.90507 (206, 1)
  833450.0 /      6.53113 (291, 1)    6.92510 ( 99, 1)    7.03834 ( 99, 1)    7.78532 (276, 1)    8.42415 (206, 1)
  833400.0 /      6.15914C(275, 1)    6.68070C(275, 1)    7.22478C(275, 1)    7.83690 (276, 1)    8.60516 (276, 1)
  833350.0 /      7.37052 (315, 1)    7.78159 (315, 1)    7.95719C(196, 1)    9.00513C(196, 1)    9.91960C(196, 1)
  833300.0 /      7.57039C(126, 1)    8.45035C(126, 1)    9.12196C(126, 1)    9.22475C(126, 1)    9.52601C(196, 1)
  833250.0 /      8.39073C( 38, 1)    9.21616C( 38, 1)    9.26114 ( 11, 1)    9.34098 (279, 1)    9.52593 (279, 1)
  833200.0 /      7.36181 (279, 1)    7.72725 (279, 1)    7.45907 (279, 1)    8.76996 (151, 1)    9.08052 ( 49, 1)
  833150.0 /      7.32419C( 38, 1)    7.24814C( 48, 1)    8.10438C( 48, 1)    8.90885C( 48, 1)    9.21606 (151, 1)
  833100.0 /      7.49386C( 48, 1)    7.92076 (335, 1)    7.91079 (335, 1)    7.80198 (334, 1)    7.18035 ( 34, 1)
  833050.0 /      7.02544C( 48, 1)    6.78762 (334, 1)    6.68849 ( 34, 1)    7.25525 (364, 1)    8.79483 ( 15, 1)
  833000.0 /      6.19383 (364, 1)    6.92770C( 30, 1)    7.91823 ( 15, 1)    8.45938C( 30, 1)    8.23356C( 30, 1)
  832950.0 /      7.01192 ( 15, 1)    7.70084C( 30, 1)    7.58732C( 30, 1)    7.29296 ( 15, 1)    7.58265 (361, 1)
  832900.0 /      7.03295C( 30, 1)    6.84958C( 30, 1)    6.34553 (361, 1)    7.43195C( 30, 1)    7.68093 (361, 1)
  832850.0 /      6.00564 ( 15, 1)    6.50096 (361, 1)    7.02170 ( 14, 1)    7.24381 (361, 1)    6.63932 (355, 1)
  832800.0 /      6.37135C( 30, 1)    6.90534 (361, 1)    6.73335 (361, 1)    6.08823 (361, 1)    7.40352 (104, 1)
  832750.0 /      6.44385 (361, 1)    6.21104 (361, 1)    5.76679 (361, 1)    6.61693 (104, 1)    7.91476 ( 56, 1)
  832700.0 /      5.71746 (361, 1)    5.41558 (361, 1)    5.95253 (104, 1)    7.23385 (104, 1)    7.39396 (104, 1)
  832650.0 /      5.05950 (361, 1)    5.39013 (104, 1)    6.50320 (104, 1)    6.77202 (104, 1)    5.97987 (104, 1)
  832600.0 /      4.92062 (104, 1)    5.88374 (104, 1)    6.21077 (104, 1)    5.64219 (104, 1)    5.08973 ( 43, 1)
  832550.0 /      5.37406 (104, 1)    5.72740 (104, 1)    5.33133 (104, 1)    4.78665 ( 43, 1)    4.73304 (341, 1)
  832500.0 /      5.31577 (104, 1)    5.05314 (104, 1)    5.21010 ( 56, 1)    4.75578 ( 56, 1)    4.75409 (341, 1)
  832450.0 /      4.79099 (104, 1)    4.82372 (311, 1)    4.64179 ( 56, 1)    4.57677 (341, 1)    4.61392C(171, 1)
  832400.0 /      4.03494 (104, 1)    4.49189 ( 56, 1)    4.32073 (341, 1)    4.70770 (341, 1)    4.62148 (341, 1)
  832350.0 /      4.30128 ( 56, 1)    4.25614 (318, 1)    4.53349 (211, 1)    4.67357 ( 34, 1)    4.90197 (279, 1)
  832300.0 /      4.18669 (318, 1)    4.40550 (318, 1)    4.59800 (318, 1)    4.89689 ( 34, 1)    4.85113 ( 65, 1)
  832250.0 /      4.84262C( 38, 1)    5.17434C( 38, 1)    5.41421C( 38, 1)    5.52618C( 38, 1)    5.51745C( 38, 1)
  832200.0 /      4.83772 (279, 1)    5.20411 (151, 1)    5.59228 (151, 1)    5.80614 ( 34, 1)    6.00264C( 48, 1)
  832150.0 /      5.24259 (334, 1)    5.57338 (334, 1)    5.60726 ( 34, 1)    5.59960 (334, 1)    5.96077C( 30, 1)
  832100.0 /      5.20202 (334, 1)    5.26863 (341, 1)    5.62764 ( 34, 1)    5.54067 ( 84, 1)    6.77946 ( 19, 1)
  832050.0 /      5.22434 (341, 1)    5.29326 ( 34, 1)    5.32408 ( 84, 1)    6.66700 ( 19, 1)    6.82142C( 30, 1)
  832000.0 /      6.45114 ( 15, 1)    6.11441 ( 15, 1)    7.38857 ( 19, 1)    6.40564 ( 14, 1)   10.19231 ( 14, 1)
                                                                                                                 2ND HI
                                                                                                                 24-HR
                                                                                                                 SGROUP
                               *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                            ***


                           * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)     *
                                                      * FROM ALL SOURCES *
                                                     * FOR THE RECEPTOR GRID *

                            * MAXIMUM VALUE EQUALS     19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

  Y-AXIS    /                                              X-AXIS (METERS)
 (METERS)   /        817750.0            817800.0            817850.0            817900.0            817950.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /     10.25477 (206, 1)   11.35241 (276, 1)   12.15099 (206, 1)   13.20797 (344, 1)   19.82199 (344, 1)
  833450.0 /      8.86403C(212, 1)    9.60790C(212, 1)   10.10975 (289, 1)   11.39459 (289, 1)   11.49663C(171, 1)
  833400.0 /      9.28771 (276, 1)    9.76618 (276, 1)    9.99187 (276, 1)   10.03293 (276, 1)   10.72632 (289, 1)
  833350.0 /     10.34698C(196, 1)   10.41959C(196, 1)   10.36536C(196, 1)    9.81072 (140, 1)    9.60959 (140, 1)
  833300.0 /      9.26644 ( 11, 1)    9.79796C(196, 1)    9.15717 (318, 1)    9.47350C(258, 1)   11.18060C(258, 1)
  833250.0 /      9.95465 (279, 1)   10.11256C( 38, 1)   10.33573 (151, 1)   10.39287 ( 49, 1)   11.06328 (206, 1)
  833200.0 /      9.68796C( 48, 1)   10.12376C( 48, 1)    9.36000C( 48, 1)    9.03233 (280, 1)   10.45609 (  7, 1)
  833150.0 /      8.91558 (334, 1)    8.44157 (266, 1)    9.46626 (266, 1)   10.36564 (148, 1)   11.00645C(126, 1)
  833100.0 /      8.54840 (266, 1)    9.55025 ( 84, 1)    9.58123C(126, 1)    9.28162 ( 19, 1)   10.02485 ( 19, 1)
  833050.0 /      9.08431C( 30, 1)    8.23601 (148, 1)    8.77929C( 30, 1)    9.85375 ( 19, 1)   12.31389 (256, 1)
  833000.0 /      7.02528 (361, 1)    8.35429 ( 19, 1)    9.22635 ( 19, 1)   11.58695 ( 14, 1)   11.44457 (256, 1)
  832950.0 /      7.96345 (361, 1)    8.21935 (355, 1)   10.62826 (104, 1)   11.04387 ( 14, 1)   10.16151 (104, 1)
  832900.0 /      7.37759 (355, 1)    9.41840 (104, 1)   10.37159 ( 14, 1)    9.33404 (255, 1)    8.39588 ( 57, 1)
  832850.0 /      8.33376 (104, 1)    9.34125 ( 14, 1)    8.36309 ( 14, 1)    7.78551 ( 57, 1)    7.77036 ( 56, 1)
  832800.0 /      8.42784 ( 14, 1)    7.90103 ( 14, 1)    7.12553 (255, 1)    6.83581 ( 57, 1)    8.30337 ( 56, 1)
  832750.0 /      7.60224 ( 56, 1)    6.67613 (104, 1)    6.28987 ( 57, 1)    6.95137 ( 56, 1)    8.19262 ( 56, 1)
  832700.0 /      6.32537 ( 56, 1)    5.52365 ( 43, 1)    5.85019 (352, 1)    7.08504C(271, 1)    7.58663 ( 73, 1)
  832650.0 /      5.35258 ( 43, 1)    5.33313 (103, 1)    6.02771C(271, 1)    7.02911 ( 56, 1)    7.70675C( 22, 1)
  832600.0 /      5.02681 ( 56, 1)    5.43208 (205, 1)    5.94003C(271, 1)    6.62837 ( 73, 1)    7.71233C( 22, 1)
  832550.0 /      4.84176 (341, 1)    5.32337 (205, 1)    6.07766 ( 56, 1)    6.86179 (362, 1)    7.50153C( 22, 1)
  832500.0 /      4.65368 (341, 1)    5.14276 ( 73, 1)    5.86490 ( 73, 1)    6.57877 (362, 1)    7.11615C( 22, 1)
  832450.0 /      4.85342C(171, 1)    5.32520 ( 56, 1)    5.86763 (362, 1)    6.43458C( 22, 1)    6.61514C( 22, 1)
  832400.0 /      4.95058 ( 56, 1)    5.79329C(171, 1)    5.93092 (202, 1)    6.22879C( 22, 1)    6.05351C( 22, 1)
  832350.0 /      5.09691 (279, 1)    5.71744C(171, 1)    6.13975C(171, 1)    6.09857C(171, 1)    5.67322C(171, 1)
  832300.0 /      5.39126 ( 19, 1)    6.13966 (279, 1)    5.85476C(171, 1)    6.14102C(126, 1)    5.59959 (203, 1)
  832250.0 /      5.93092 (155, 1)    6.53041 (238, 1)    6.95450 ( 19, 1)    7.08321 (151, 1)    7.66582 ( 19, 1)
  832200.0 /      6.13612 (151, 1)    6.56662C( 48, 1)    7.79293 ( 19, 1)    8.63346 (148, 1)    8.57006 (104, 1)
  832150.0 /      6.83829 ( 19, 1)    7.64948 (148, 1)    7.52000 ( 14, 1)    8.57392 (104, 1)    7.80321 ( 57, 1)
  832100.0 /      7.01519C( 30, 1)    7.68405 ( 14, 1)    8.36618 (256, 1)    8.47283 (104, 1)    8.38448 ( 19, 1)
  832050.0 /      7.68230 ( 14, 1)    7.67450 (256, 1)    8.38343 ( 14, 1)    8.42637 (104, 1)    8.84587 (104, 1)
  832000.0 /     11.15791 (355, 1)   16.38585 (355, 1)   19.50557 ( 14, 1)   14.64414 ( 19, 1)   14.81419 ( 57, 1)
                                                                                                                 2ND HI
                                                                                                                 24-HR
                                                                                                                 SGROUP
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                           *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***


                        * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *
                                                  * FROM ALL SOURCES *
                                                * FOR THE RECEPTOR GRID *

                         * MAXIMUM VALUE EQUALS     19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

  Y-AXIS   /                                                 X-AXIS (METERS)
 (METERS)  /          818000.0                818050.0            818100.0             818150.0             818200.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /      18.54229 (344, 1)     18.62510 (264, 1)     15.54926 (176, 1)     13.69999 (177, 1)     15.63571C(162, 1)
  833450.0 /      12.00577 (289, 1)     12.96268 (202, 1)     11.20536 (227, 1)      8.57619C(197, 1)      3.93407 (121, 1)
  833400.0 /      11.62837 (241, 1)      9.64653 (209, 1)      8.59919 (205, 1)      4.33416 (299, 1)      3.77141C(304, 1)
  833350.0 /       9.94434 (288, 1)      9.81147 (288, 1)      7.09574 (288, 1)      5.12997 (299, 1)      3.97824 (251, 1)
  833300.0 /      12.29725 (279, 1)     10.14759 (206, 1)      7.99209 (206, 1)      5.24020 (299, 1)      4.28783 (251, 1)
  833250.0 /      11.11662 (151, 1)     10.65334 (152, 1)      9.36492 (273, 1)      4.97625 (299, 1)      3.82158 (326, 1)
  833200.0 /      13.22567C(126, 1)      9.50096C(171, 1)      8.73133 (280, 1)      7.34432 (251, 1)      6.31463 (303, 1)
  833150.0 /       9.92935C(171, 1)     11.40914 (103, 1)     11.25383 (103, 1)      9.46547 (303, 1)      8.27978 (251, 1)
  833100.0 /      12.81053 (104, 1)     12.87149 (104, 1)     11.51190 (104, 1)     10.78972 (303, 1)     10.60401 ( 81, 1)
  833050.0 /      12.95659 (103, 1)     11.52534 (103, 1)     10.84710 (303, 1)     10.24990 (303, 1)     11.62134C(271, 1)
  833000.0 /      10.42279 (104, 1)      9.45165 ( 56, 1)     11.40373 ( 73, 1)      9.52870 ( 81, 1)     11.31226C(271, 1)
  832950.0 /       9.50445 (103, 1)     10.29502C( 22, 1)     11.67351 ( 19, 1)      9.74400 ( 81, 1)     10.59970C(271, 1)
  832900.0 /       9.35503 ( 56, 1)     11.24214C( 22, 1)     11.30160C( 22, 1)      9.87571 ( 81, 1)     10.09682 (354, 1)
  832850.0 /       9.38874 ( 56, 1)     11.32815C( 22, 1)     10.09333C( 22, 1)      9.87073 ( 81, 1)     10.00230 (354, 1)
  832800.0 /       9.13896C( 22, 1)     10.84500C( 22, 1)      8.81590C( 22, 1)      9.48504 ( 19, 1)      9.68267 (354, 1)
  832750.0 /       9.40503C( 22, 1)      9.97637C( 22, 1)      8.16365 ( 59, 1)      8.42706 ( 19, 1)      9.23523 (354, 1)
  832700.0 /       9.26580C( 22, 1)      8.90349C( 22, 1)      7.70441 ( 59, 1)      8.23082 ( 61, 1)      8.51154 ( 81, 1)
  832650.0 /       8.81263C( 22, 1)      7.79708C( 22, 1)      7.14364 ( 59, 1)      8.00747 ( 61, 1)      7.77581 ( 81, 1)
  832600.0 /       8.13428C( 22, 1)      6.77583C( 22, 1)      6.73554 ( 81, 1)      7.76429 ( 61, 1)      7.16072 ( 81, 1)
  832550.0 /       7.33336C( 22, 1)      6.26525 ( 57, 1)      6.69314 ( 61, 1)      7.49713 ( 61, 1)      6.67675 ( 81, 1)
  832500.0 /       6.51234C( 22, 1)      5.90404 ( 59, 1)      6.53579 ( 81, 1)      7.17143 ( 61, 1)      6.27080 ( 81, 1)
  832450.0 /       5.74905C( 22, 1)      5.69274 ( 61, 1)      6.43783 ( 81, 1)      6.79098 ( 61, 1)      5.93447 ( 33, 1)
  832400.0 /       5.27260 ( 61, 1)      5.56310 ( 61, 1)      6.30035 ( 81, 1)      6.56132 ( 81, 1)      5.63544C( 22, 1)
  832350.0 /       5.14021 ( 61, 1)      5.55513 ( 61, 1)      6.07592 ( 81, 1)      6.08054 ( 61, 1)      5.65268 (354, 1)
  832300.0 /       5.46402 ( 61, 1)      5.66956 ( 61, 1)      6.11936 ( 81, 1)      5.76596 ( 81, 1)      5.43517C( 22, 1)
  832250.0 /       6.39675 (104, 1)      6.31980 ( 61, 1)      6.51629 ( 81, 1)      5.76135 ( 61, 1)      5.24886C( 22, 1)
  832200.0 /       7.62111 ( 19, 1)      7.04462 ( 19, 1)      7.14144 ( 81, 1)      6.00910 ( 81, 1)      5.22929C( 22, 1)
  832150.0 /       8.13112 (104, 1)      7.64807 ( 81, 1)      7.76538 ( 81, 1)      6.69591C( 22, 1)      5.83866 ( 51, 1)
  832100.0 /       8.48212 ( 61, 1)      7.94346 ( 81, 1)      7.88648 ( 61, 1)      7.00850C( 22, 1)      6.17084 ( 51, 1)
  832050.0 /       8.90785 ( 61, 1)      8.00155 ( 81, 1)      7.81730 (354, 1)      7.22484 (354, 1)      6.36297C( 21, 1)
  832000.0 /      11.17473 ( 19, 1)     13.82679 (347, 1)     18.34929 ( 59, 1)     19.75532 (354, 1)     17.78988 (354, 1)
                                                                                                                  2ND H
                                                                                                                  24-HR
                                                                                                                  SGROUP
                           *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                                 ***


                        * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)       *
                                                  * FROM ALL SOURCES *
                                                * FOR THE RECEPTOR GRID *

                         * MAXIMUM VALUE EQUALS     19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

  Y-AXIS   /                                                 X-AXIS (METERS)
 (METERS)  /          818250.0                818300.0            818350.0             818400.0             818450.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  833500.0 /       9.98644 (116, 1)      8.01913 (120, 1)     12.88818 (120, 1)     14.79608 (181, 1)     15.37193 (252, 1)
  833450.0 /       4.13116 (109, 1)      4.78777 (149, 1)     10.89306 (181, 1)     11.94048 (181, 1)     11.32210C(156, 1)
  833400.0 /       3.61515C( 92, 1)      3.92779 (260, 1)      7.58358 (181, 1)      9.28051C(145, 1)      8.77272 ( 77, 1)
  833350.0 /       3.59559C(106, 1)      3.91273C( 92, 1)      4.99944 (149, 1)      6.87687 (149, 1)      6.78464 ( 95, 1)
  833300.0 /       3.36793 (282, 1)      3.67602C(106, 1)      6.93564 (131, 1)      9.08305 (149, 1)      8.12661C(135, 1)
  833250.0 /       4.61311 (251, 1)      4.89268 (282, 1)      6.78132C(127, 1)      9.25724C(219, 1)      8.77105C(135, 1)
  833200.0 /       8.30081 (299, 1)      8.04896 (339, 1)      8.14209C( 92, 1)      7.79224C(127, 1)      9.77220 ( 50, 1)
  833150.0 /      11.25268 (251, 1)     10.73866 (251, 1)      8.89522 (282, 1)      9.00044C( 92, 1)      8.54253C( 92, 1)
  833100.0 /      11.03772 (251, 1)     10.00330 (326, 1)      8.52458 (261, 1)      8.51101 (305, 1)      7.96812C( 92, 1)
  833050.0 /      11.08549 ( 51, 1)     10.43246C( 21, 1)      8.71507 (261, 1)      8.44309 (213, 1)      7.95652 ( 42, 1)
  833000.0 /      10.69419 ( 51, 1)     11.18084 (354, 1)      8.29757 (326, 1)      9.49465 ( 42, 1)      7.62113 ( 77, 1)
  832950.0 /      10.26346 (354, 1)     11.42700 (354, 1)      8.22941C( 21, 1)      8.68154 ( 42, 1)      7.36326C( 20, 1)
  832900.0 /      10.16852 (354, 1)     11.06686 (354, 1)      9.30295C( 21, 1)      7.50231C( 97, 1)      7.79195 (213, 1)
  832850.0 /       9.78276C( 21, 1)     10.44098 (354, 1)      9.90369C( 21, 1)      6.78848 (340, 1)      6.81948 ( 42, 1)
  832800.0 /       9.19939C( 21, 1)      9.72680 (354, 1)     10.13818C( 21, 1)      6.82884C( 21, 1)      6.61041 (213, 1)
  832750.0 /       8.60857C( 21, 1)      9.00794 (354, 1)     10.08860C( 21, 1)      7.24689C( 21, 1)      5.70538 (213, 1)
  832700.0 /       8.03090C( 21, 1)      8.32123 (354, 1)      9.83449C( 21, 1)      7.44789C( 21, 1)      5.79899 (340, 1)
  832650.0 /       7.47798C( 21, 1)      7.68147 (354, 1)      9.44818C( 21, 1)      7.50541C( 21, 1)      6.27699 (340, 1)
  832600.0 /       6.95674C( 21, 1)      7.09522 (354, 1)      8.98689C( 21, 1)      7.45923C( 21, 1)      6.65228 (340, 1)
  832550.0 /       6.47026C( 21, 1)      6.73473C(353, 1)      8.43548 (340, 1)      7.33439C( 21, 1)      6.27280 (330, 1)
  832500.0 /       6.01950C( 21, 1)      6.66028 (237, 1)      7.91169 (340, 1)      7.33256 (182, 1)      6.66074 (182, 1)
  832450.0 /       5.63555C( 22, 1)      5.93695C(353, 1)      7.37679 (340, 1)      7.20622 (354, 1)      6.50174 (354, 1)
  832400.0 /       5.43066 ( 77, 1)      5.68483 (354, 1)      6.78166 (340, 1)      7.12550 (354, 1)      6.38359 (354, 1)
  832350.0 /       5.47904 (354, 1)      5.76532 (354, 1)      6.49640 (354, 1)      6.76250 (354, 1)      6.18119 (354, 1)
  832300.0 /       5.20354C( 22, 1)      5.43939C( 21, 1)      6.15757 (354, 1)      6.33815 (354, 1)      5.94187 (354, 1)
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    832250.0 /      5.58445 (354,  1)      5.22077C( 21,  1)      5.73289 (354,  1)      5.93607 (354,  1)      5.64660 (354,  1)
    832200.0 /      5.43233C( 22,  1)      5.21114 (354,  1)      5.60634C( 21,  1)      6.33413C(353,  1)      5.31211 (354,  1)
    832150.0 /      5.20911C(271,  1)      5.12914 ( 77,  1)      5.42982C(353,  1)      5.93470 (340,  1)      6.28330C(353,  1)
    832100.0 /      5.25954C(271,  1)      4.75367C( 21,  1)      5.01907C(353,  1)      5.77830 (340,  1)      6.27510 (340,  1)
    832050.0 /      5.50885 ( 51,  1)      4.81967 (354,  1)      4.85668C(353,  1)      5.62726 (340,  1)      6.06856C(353,  1)
    832000.0 /     14.90451C( 21,  1)     11.14612 (354,  1)      7.71659 ( 60,  1)      9.13146C(360,  1)     11.36139C(360,  1)
                                                                                                                      2ND HI
                                                                                                                      24-HR
                                                                                                                      SGROUP
                                  *** HUNG SHUI KIU (CHIMNEYS' EMISSION)                           ***


                              * SECOND HIGHEST 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER)     *
                                                           * FROM ALL SOURCES *
                                                        * FOR THE RECEPTOR GRID *

                               * MAXIMUM VALUE EQUALS     19.82199 AND OCCURRED AT (  817950.0,  833500.0) *

    Y-AXIS   /                                                      X-AXIS (METERS)
   (METERS)  /           818500.0
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

    833500.0 /     17.29388 ( 71,  1)
    833450.0 /     10.99072C(145,  1)
    833400.0 /      9.39432 (123,  1)
    833350.0 /      7.35968 (123,  1)
    833300.0 /      8.98298 (231,  1)
    833250.0 /      8.58273 ( 50,  1)
    833200.0 /      9.00053 ( 50,  1)
    833150.0 /      9.11146 (149,  1)
    833100.0 /      8.92217 ( 72,  1)
    833050.0 /      7.50930 (260,  1)
    833000.0 /      7.59164 ( 72,  1)
    832950.0 /      7.29254 ( 77,  1)
    832900.0 /      6.32161 ( 42,  1)
    832850.0 /      6.07226 ( 42,  1)
    832800.0 /      5.97096 (213,  1)
    832750.0 /      5.92309 (213,  1)
    832700.0 /      5.95568 (213,  1)
    832650.0 /      6.31103 (252,  1)
    832600.0 /      6.07991C( 97,  1)
    832550.0 /      5.71961 (330,  1)
    832500.0 /      5.40268 (  9,  1)
    832450.0 /      5.39354 (  9,  1)
    832400.0 /      4.96319C(265,  1)
    832350.0 /      5.40805 (340,  1)
    832300.0 /      5.44953 (340,  1)
    832250.0 /      4.75123C(310,  1)
    832200.0 /      4.50536 (354,  1)
    832150.0 /      4.47444C(353,  1)
    832100.0 /      5.53508C(353,  1)
    832050.0 /      5.77572C(353,  1)
    832000.0 /      9.50877 (340,  1)

  RUN ENDED ON 04-01-96 AT 19:46:58
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Appendix 2

Emission Factors for the Dust Emission Impact Assessment

Yuen Long - Tuen Mun Corridor, Engineering Works for Hung Shui Kiu					
Environmental Impact Assessment					
Dust emission from unpaved road with dust mitigation measures					
Emission factor for industrial unpaved road (kg/v-km), E =				k(1.7)(s/12)(S/48)(W/2.7)0.7(w/4)0.5	
where	k =	particle size multiplier (dimensionless) =		0.8	
	s =	silt content of road surface materials (%) =		4.8	
	S =	mean vehicle speed (km/hr) =		5	
	W =	mean vehicle weight (Mg) =		8	unladen
	W =	mean vehicle weight (Mg) =		24	laden
	w =	mean number of wheels =		10	
Emission factor from industrial unpaved road (kg/v-km or g/v-m)) =				0.1916	unladen
Emission factor from industrial unpaved road (kg/v-km or g/v-m)) =				0.4135	laden
Dust emission from loading and unloading of materials					
Emission factor for truck loading (kg/Mg), E =		k(0.0016)(U/2.2)1.3/ (M/2)1.4			
where	k =	particle size multiplier (dimensionless) =		0.74	
	U =	mean wind speed (m/s) =		1.0	
	M =	material moisture content (%) =		2.0	
Emission factor for loading each truck =		0.0004	kg/Mg		
Capacity of each truck =		12.50	Mg		
Number of loadings in an hour =		6			
Total amount of soil, spoil or construction material handled =		75	Mg/hr		
max. dust emission rate =		0.01	g/s		
Dust emission from excavation/earthwork					
Emission factor for excavation (kg/Mg), E =			k(0.0016)(U/2.2)1.3/ (M/2)1.4		
where	k =	particle size multiplier (dimensionless) =		0.74	
	U =	mean wind speed (m/s) =		1.0	
	M =	material moisture content (%) =		2.0	
Emission factor for excavation =		0.0004	kg/Mg		
max. excavation rate =		30	m3/hr/excavator		
max. excavation rate =		75	Mg/hr		
max. dust emission rate		0.01	g/s		

Appendix 3

Typical FDM Result Files
for the Dust Emission Impact Assessment

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                  FDM - (DATED 91109)

                  IBM-PC VERSION (1.01)
                  (C) COPYRIGHT 1991, TRINITY CONSULTANTS, INC.
                  SERIAL NUMBER 9181  SOLD TO EHS CONSULTANTS LTD
                  RUN BEGAN ON  8/08/96 AT 13:42:45



  RUN TITLE:
       Engineering Works for Hung Shui Kiu (D1,L1)

       INPUT FILE NAME: A3.DAT
       OUTPUT FILE NAME: A3.LST
       MET DATA READ FROM FILE NAME: LFS94S.BIN
       PLOT OUTPUT WRITTEN TO FILE NAME: A3.RAW


       CONVERGENCE OPTION 1=OFF, 2=ON                       1
       MET OPTION SWITCH, 1=CARDS, 2=PREPROCESSED           2
       PLOT FILE OUTPUT, 1=NO, 2=YES                        2
       MET DATA PRINT SWITCH, 1=NO, 2=YES                   1
       POST-PROCESSOR OUTPUT, 1=NO, 2=YES                   1
       DEP. VEL./GRAV. SETL. VEL., 1=DEFAULT, 2=USER        1
       PRINT 1-HOUR AVERAGE CONCEN, 1=NO, 2=YES             3
       PRINT 3-HOUR AVERAGE CONCEN, 1=NO, 2=YES             1
       PRINT 8-HOUR AVERAGE CONCEN, 1=NO, 2=YES             1
       PRINT 24-HOUR AVERAGE CONCEN, 1=NO, 2=YES            3
       PRINT LONG-TERM AVERAGE CONCEN, 1=NO, 2=YES          3
       BYPASS RAMMET CALMS RECOGNITION, 1=NO, 2=YES         2
       NUMBER OF SOURCES PROCESSED                         24
       NUMBER OF RECEPTORS PROCESSED                        3
       NUMBER OF PARTICLE SIZE CLASSES                     20
       NUMBER OF HOURS OF MET DATA PROCESSED             8760
       LENGTH IN MINUTES OF 1-HOUR OF MET DATA            60.
       ROUGHNESS LENGTH IN CM                           10.00
       SCALING FACTOR FOR SOURCE AND RECPTORS          1.0000
       PARTICLE DENSITY IN G/CM**3                       2.50
       ANEMOMETER HEIGHT IN M                           10.00

       PREPROCESSED METEOROLOGICAL DATA SELECTION SWITCHES
       11111111111111111111111111111111111111111111111111111111111111111111111111111111
       11111111111111111111111111111111111111111111111111111111111111111111111111111111
       11111111111111111111111111111111111111111111111111111111111111111111111111111111
       11111111111111111111111111111111111111111111111111111111111111111111111111111111
       1111111111111111111111111111111111111111111110


       GENERAL PARTICLE SIZE CLASS INFORMATION

                                   GRAV.                FRACTION
         PARTICLE        CHAR.   SETTLING   DEPOSITION   IN EACH
             SIZE         DIA.   VELOCITY     VELOCITY      SIZE
            CLASS         (UM)    (M/SEC)      (M/SEC)     CLASS
            -----    ---------   --------   ----------  --------
                1    1.0000000         **           **     .0100
                2    2.0000000         **           **     .0100
                3    3.0000000         **           **     .0600
                4    5.0000000         **           **     .0300
                5    7.0000000         **           **     .0200
                6    9.0000000         **           **     .0100
                7   10.0000000         **           **     .0500
                8   20.0000000         **           **     .0400
                9   40.0000000         **           **     .0300
               10   60.0000000         **           **     .0300
               11   80.0000000         **           **     .0200
               12   **********         **           **     .0800
               13   **********         **           **     .1500
               14   **********         **           **     .0700
               15   **********         **           **     .1700
               16   **********         **           **     .1500
               17   **********         **           **     .0300
               18   **********         **           **     .0200
               19   **********         **           **     .0100
               20   **********         **           **     .0100
       ----------
       ** COMPUTED BY FDM


       RECEPTOR COORDINATES (X,Y,Z)

 415.,    839.,   2.)  (   415.,    839.,   3.)  (   415.,    839.,   5.)
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        SOURCE INFORMATION

               ENTERED EMIS.     TOTAL
                RATE (G/SEC,   EMISSION    WIND
                 G/SEC/M OR       RATE    SPEED      X1        Y1        X2        Y2   HEIGHT    WIDTH
        TYPE     G/SEC/M**2)    (G/SEC)    FAC.     (M)       (M)       (M)       (M)      (M)      (M)
        ---- ---------------  ----------  ------  ------  --------  -------  --------  -------  -------
           1       .010000000      .01000  1.300    414.      822.       0.        0.      .50      .00
           1       .010000000      .01000  1.300    414.      822.       0.        0.     1.50      .00
           2       .000027000      .00670   .000    310.      831.     313.      583.     1.00     1.00
           2       .000027000      .00374   .000    313.      583.     325.      445.     1.00     1.00
           2       .000027000      .00259   .000    325.      445.     382.      368.     1.00     1.00
           2       .000027000      .00235   .000    419.      822.     414.      735.     1.00     1.00
           2       .000027000      .00179   .000    414.      735.     393.      672.     1.00     1.00
           2       .000027000      .00178   .000    393.      672.     403.      607.     1.00     1.00
           2       .000027000      .00456   .000    403.      607.     407.      438.     1.00     1.00
           2       .000027000      .00251   .000    313.      583.     403.      607.     1.00     1.00
           2       .000027000      .00129   .000    414.      735.     461.      726.     1.00     1.00
           2       .000027000      .00237   .000    461.      726.     545.      752.     1.00     1.00
           2       .000027000      .00490   .000    310.      831.     491.      820.     1.00     1.00
           2       .000057000      .01414   .000    310.      831.     313.      583.     1.00     1.00
           2       .000057000      .00790   .000    313.      583.     325.      445.     1.00     1.00
           2       .000057000      .00546   .000    325.      445.     382.      368.     1.00     1.00
           2       .000057000      .00497   .000    419.      822.     414.      735.     1.00     1.00
           2       .000057000      .00379   .000    414.      735.     393.      672.     1.00     1.00
           2       .000057000      .00375   .000    393.      672.     403.      607.     1.00     1.00
           2       .000057000      .00964   .000    403.      607.     407.      438.     1.00     1.00
           2       .000057000      .00531   .000    313.      583.     403.      607.     1.00     1.00
           2       .000057000      .00273   .000    414.      735.     461.      726.     1.00     1.00
           2       .000057000      .00501   .000    461.      726.     545.      752.     1.00     1.00
           2       .000057000      .01034   .000    310.      831.     491.      820.     1.00     1.00
                               ===========
        TOTAL EMISSIONS             .12760
        NOTE:   SOME SOURCE EMISSION RATES ARE A FUNCTION OF WIND SPEED AND TOTAL IS NOT CORRECT


TOP 50 TABLE FOR  1 HOUR AVERAGES


RANK   RECEPTOR   X-COORDINATE   Y-COORDINATE   ENDING HOUR   CONCENTRATION    DEPOSITION
----   --------   ------------   ------------   -----------   -------------   ------------


  1        1           415.0          839.0         2746          554.5076        71.7764
  2        1           415.0          839.0         5386          518.8418        62.7807
  3        1           415.0          839.0         2744          508.2182        61.7127
  4        1           415.0          839.0         3841          501.1585        55.9794
  5        1           415.0          839.0         5184          488.7755        58.9588
  6        1           415.0          839.0         2598          470.5970        13.9748
  7        1           415.0          839.0         3944          467.0109        47.9900
  8        1           415.0          839.0         5191          464.4807        43.3025
  9        1           415.0          839.0         3964          460.0042        38.1378
 10        1           415.0          839.0         2766          456.9429        38.0295
 11        1           415.0          839.0         2736          455.4417        42.4077
 12        1           415.0          839.0         5310          447.3566        45.9872
 13        1           415.0          839.0         3915          447.3231        46.0389
 14        1           415.0          839.0         3940          441.7697        57.3347
 15        1           415.0          839.0         3943          440.3566        49.4703
 16        1           415.0          839.0         3966          436.0661        31.4009
 17        1           415.0          839.0         3891          432.5409        44.5745
 18        1           415.0          839.0         4015          430.3077        35.4712
 19        1           415.0          839.0         5313          430.2410        35.5580
 20        1           415.0          839.0         4017          416.6812        38.8271
 21        1           415.0          839.0         2908          416.6497        38.8722
 22        1           415.0          839.0         3896          415.9586        29.9638
 23        1           415.0          839.0         2768          415.8935        30.0409
 24        1           415.0          839.0         2885          406.9790        25.0387
 25        1           415.0          839.0         3842          397.8658        40.7421
 26        1           415.0          839.0         3942          383.2048        43.1954
 27        1           415.0          839.0         3938          374.6373        19.4019
 28        1           415.0          839.0         5813          367.1660         5.2177
 29        1           415.0          839.0         6633          351.4712        12.7454
 30        1           415.0          839.0         5337          350.0260        29.0464
 31        1           415.0          839.0         5453          349.3050         6.6694
 32        1           415.0          839.0         5287          341.6382        44.1609
 33        1           415.0          839.0         3937          335.0357        17.3491
 34        1           415.0          839.0         3579          332.2050        20.2474
 35        1           415.0          839.0         3826          330.7283        37.1380
 36        1           415.0          839.0         2863          328.1211        12.0083
 37        1           415.0          839.0         5311          326.1099        30.5378
 38        1           415.0          839.0         5192          324.2287        23.4212
 39        1           415.0          839.0         2597          314.1663        16.3539
 40        1           415.0          839.0         4014          312.1566        25.8111
 41        1           415.0          839.0         4016          307.5317        31.7089
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  42        1          415.0          839.0        5193        307.1188       28.7243
  43        1          415.0          839.0        2622        307.0510       28.8237
  44        1          415.0          839.0        1587        304.8596        2.4930
  45        1          415.0          839.0        3871        301.5207       15.5689
  46        1          415.0          839.0        4948        299.4665        3.0980
  47        1          415.0          839.0        2575        297.6552       13.6806
  48        1          415.0          839.0        8285        293.3834       17.9143
  49        1          415.0          839.0        2096        289.0085       10.3870
  50        1          415.0          839.0        5456        285.0653        8.4123


 HIGHEST AND SECOND HIGHEST VALUES FOR  1 HOUR AVERAGES


 RECEPTOR   X-COORDINATE  Y-COORDINATE  HIGHEST VALUE  ENDING HOUR  DEPOSITION   SECOND HIGH  ENDING HOUR  DEPOSTION
 --------   ------------  ------------  ---------------------------------------   ------------------------------------

      1          415.0         839.0       554.5076    2746.        71.7764        518.8418    5386.        62.7807
      2          415.0         839.0       163.0121    2746.        13.2351        152.5242    5386.        11.3298
      3          415.0         839.0        31.0946    2795.         1.7323         28.2932    4019.         1.2841


 TOP 50 TABLE FOR 24 HOUR AVERAGES

 RANK   RECEPTOR   X-COORDINATE   Y-COORDINATE   ENDING HOUR   CONCENTRATION   DEPOSITION
 ----   --------   ------------   ------------   -----------   -------------  ------------

   1        1          415.0          839.0        3960C       195.6076       18.5736
   2        1          415.0          839.0        4032C       113.3894       10.7551
   3        1          415.0          839.0        5328C       103.4679        9.8840
   4        1          415.0          839.0        2784C       102.8284        7.4803
   5        1          415.0          839.0        2760C        99.1501       11.3993
   6        1          415.0          839.0        5208C        98.5495        9.6733
   7        1          415.0          839.0        3912C        96.5275        7.4224
   8        1          415.0          839.0        2928C        91.6382        7.7335
   9        1          415.0          839.0        3984C        89.0692        6.1075
  10        1          415.0          839.0        2904C        72.9985        4.7424
  11        1          415.0          839.0        3864C        65.2439        6.4813
  12        1          415.0          839.0        2616C        63.3262        3.4619
  13        2          415.0          839.0        3960C        62.9419        3.7028
  14        1          415.0          839.0        5400C        59.4582        5.8395
  15        1          415.0          839.0        3888C        59.3135        3.0520
  16        1          415.0          839.0        3936C        55.7344        5.7679
  17        1          415.0          839.0        5472C        54.0923        1.8076
  18        1          415.0          839.0        3840C        52.6298        5.8950
  19        1          415.0          839.0        5352C        51.8898        4.4443
  20        1          415.0          839.0        2736C        50.1460        4.7423
  21        1          415.0          839.0        8304C        46.9121        2.5231
  22        1          415.0          839.0        2640C        44.0379        3.8075
  23        1          415.0          839.0        4008C        39.0408        2.7285
  24        1          415.0          839.0        2880C        38.5727        2.0912
  25        2          415.0          839.0        4032C        38.4296        2.2761
  26        1          415.0          839.0        5304C        36.6720        3.3306
  27        1          415.0          839.0        2808C        35.4027        3.3398
  28        1          415.0          839.0        5184C        35.2140        3.4714
  29        2          415.0          839.0        5328C        34.2939        1.9822
  30        2          415.0          839.0        2784C        33.9128        1.4866
  31        1          415.0          839.0        3264C        32.8223        3.2656
  32        2          415.0          839.0        3912C        32.4559        1.5642
  33        2          415.0          839.0        2760C        31.9615        2.3783
  34        2          415.0          839.0        2928C        31.9342        1.7650
  35        2          415.0          839.0        5208C        31.3444        1.8505
  36        1          415.0          839.0        5424C        31.0574        2.3658
  37        1          415.0          839.0        3192C        30.4515        2.5784
  38        2          415.0          839.0        3984C        29.6819        1.2779
  39        1          415.0          839.0        5376C        29.6343        1.6657
  40        1          415.0          839.0        7704C        26.9781         .9647
  41        1          415.0          839.0        1008C        26.3992         .6937
  42        1          415.0          839.0        3120C        24.0260        1.2793
  43        2          415.0          839.0        2904C        23.8629        1.1071
  44        1          415.0          839.0        6648C        22.4112         .7961
  45        1          415.0          839.0        5832C        20.5969         .2998
  46        2          415.0          839.0        5352C        20.0930        1.1231
  47        1          415.0          839.0        3600C        19.8291        1.1653
  48        2          415.0          839.0        3864C        19.7985        1.1492
  49        1          415.0          839.0        4608C        19.7370        2.2265
  50        1          415.0          839.0        4248C        19.5496        1.1152


 HIGHEST AND SECOND HIGHEST VALUES FOR 24 HOUR AVERAGES
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RECEPTOR   X-COORDINATE  Y-COORDINATE  HIGHEST VALUE  ENDING HOUR  DEPOSITION    SECOND HIGH  ENDING HOUR  DEPOSTION
--------   ------------  ------------  ------------------------------------------  --------------------------------------

      1          415.0         839.0        195.6076     3960.C       18.5736         113.3894     4032.C       10.7551
      2          415.0         839.0         62.9419     3960.C        3.7028          38.4296     4032.C        2.2761
      3          415.0         839.0          5.1629     3960.C         .2187           4.8593     3264.C         .2498


TOP 50 TABLE FOR LONG TERM AVERAGES

RANK  RECEPTOR  X-COORDINATE  Y-COORDINATE  ENDING HOUR  CONCENTRATION  DEPOSITION
----  --------  ------------  ------------  -----------  -------------  -------------

  1       1          415.0         839.0        8760C          12.5883         .8833
  2       2          415.0         839.0        8760C           4.7472         .2140
  3       3          415.0         839.0        8760C            .9040         .0289
  4       0             .0            .0          0              .0000         .0000
  5       0             .0            .0          0              .0000         .0000
  6       0             .0            .0          0              .0000         .0000
  7       0             .0            .0          0              .0000         .0000
  8       0             .0            .0          0              .0000         .0000
  9       0             .0            .0          0              .0000         .0000
 10       0             .0            .0          0              .0000         .0000
 11       0             .0            .0          0              .0000         .0000
 12       0             .0            .0          0              .0000         .0000
 13       0             .0            .0          0              .0000         .0000
 14       0             .0            .0          0              .0000         .0000
 15       0             .0            .0          0              .0000         .0000
 16       0             .0            .0          0              .0000         .0000
 17       0             .0            .0          0              .0000         .0000
 18       0             .0            .0          0              .0000         .0000
 19       0             .0            .0          0              .0000         .0000
 20       0             .0            .0          0              .0000         .0000
 21       0             .0            .0          0              .0000         .0000
 22       0             .0            .0          0              .0000         .0000
 23       0             .0            .0          0              .0000         .0000
 24       0             .0            .0          0              .0000         .0000
 25       0             .0            .0          0              .0000         .0000
 26       0             .0            .0          0              .0000         .0000
 27       0             .0            .0          0              .0000         .0000
 28       0             .0            .0          0              .0000         .0000
 29       0             .0            .0          0              .0000         .0000
 30       0             .0            .0          0              .0000         .0000
 31       0             .0            .0          0              .0000         .0000
 32       0             .0            .0          0              .0000         .0000
 33       0             .0            .0          0              .0000         .0000
 34       0             .0            .0          0              .0000         .0000
 35       0             .0            .0          0              .0000         .0000
 36       0             .0            .0          0              .0000         .0000
 37       0             .0            .0          0              .0000         .0000
 38       0             .0            .0          0              .0000         .0000
 39       0             .0            .0          0              .0000         .0000
 40       0             .0            .0          0              .0000         .0000
 41       0             .0            .0          0              .0000         .0000
 42       0             .0            .0          0              .0000         .0000
 43       0             .0            .0          0              .0000         .0000
 44       0             .0            .0          0              .0000         .0000
 45       0             .0            .0          0              .0000         .0000
 46       0             .0            .0          0              .0000         .0000
 47       0             .0            .0          0              .0000         .0000
 48       0             .0            .0          0              .0000         .0000
 49       0             .0            .0          0              .0000         .0000
 50       0             .0            .0          0              .0000         .0000

RUN ENDED ON  8/08/96 AT 14:45:20
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Appendix 4

Predicted Traffic Data on the Proposed Roads for the Vehicular Emission Impact Assessment

Refer to LIIAMAIHJ.N07

Table 1 2011 AM

Road	Location	Light Vehs/Hour				Good Vehs/hour	
		Car	Taxi	LGV	PV Tot.	M/HGV.	GV Tot.
D1	A	408	314	264	1546	397	397
	B	1002	412	293	1707	412	412
	C	1186	488	346	2020	434	434
D2	D	639	263	186	1088	189	189
	E	982	404	287	1673	242	242
L1	F	157	58	28	243	22	22
	G	323	119	57	499	42	42
	H	323	119	57	499	38	38
	I	421	155	74	650	51	51
	J	457	168	81	706	47	47
	K	497	183	88	768	49	49
	L	475	175	84	734	49	49
L2	M	407	150	71	628	56	56
	N	202	74	36	312	40	40
	O	175	65	31	271	25	25
	P	245	90	44	379	32	32
	Q	122	45	22	189	17	17
L3	R	317	117	56	490	54	54
L4	S	319	117	57	493	29	29
	T	57	21	10	88	4	4
	U	57	21	10	88	4	4
L5	V	29	11	5	45	20	20
L6	W	214	79	37	330	35	35
	X	108	40	18	166	18	18
L11	Y	33	12	6	51	5	5
	Z	111	41	19	171	12	12
L12	AA	212	78	38	328	21	21
	BB	203	75	36	314	20	20
	CC	45	17	8	70	2	2
	DD	203	75	36	314	20	20
L13	EE	45	17	8	70	2	2
L14	FF	114	42	26	176	8	8
L15	GG	197	72	35	304	50	50
	HH	197	72	35	304	50	50
CPR	II	1192	490	348	2030	284	284
	JJ	1014	417	296	1727	234	234
	KK	1161	478	338	1977	244	244
	LL	1191	490	348	2029	257	257

major	58.72%	24.16%	17.11%	(D1, D2, CPR)
minor (interior)	64.76%	23.81%	11.43%	

0984/NIA.WP/ala

Refer to L11AmHH2.NET

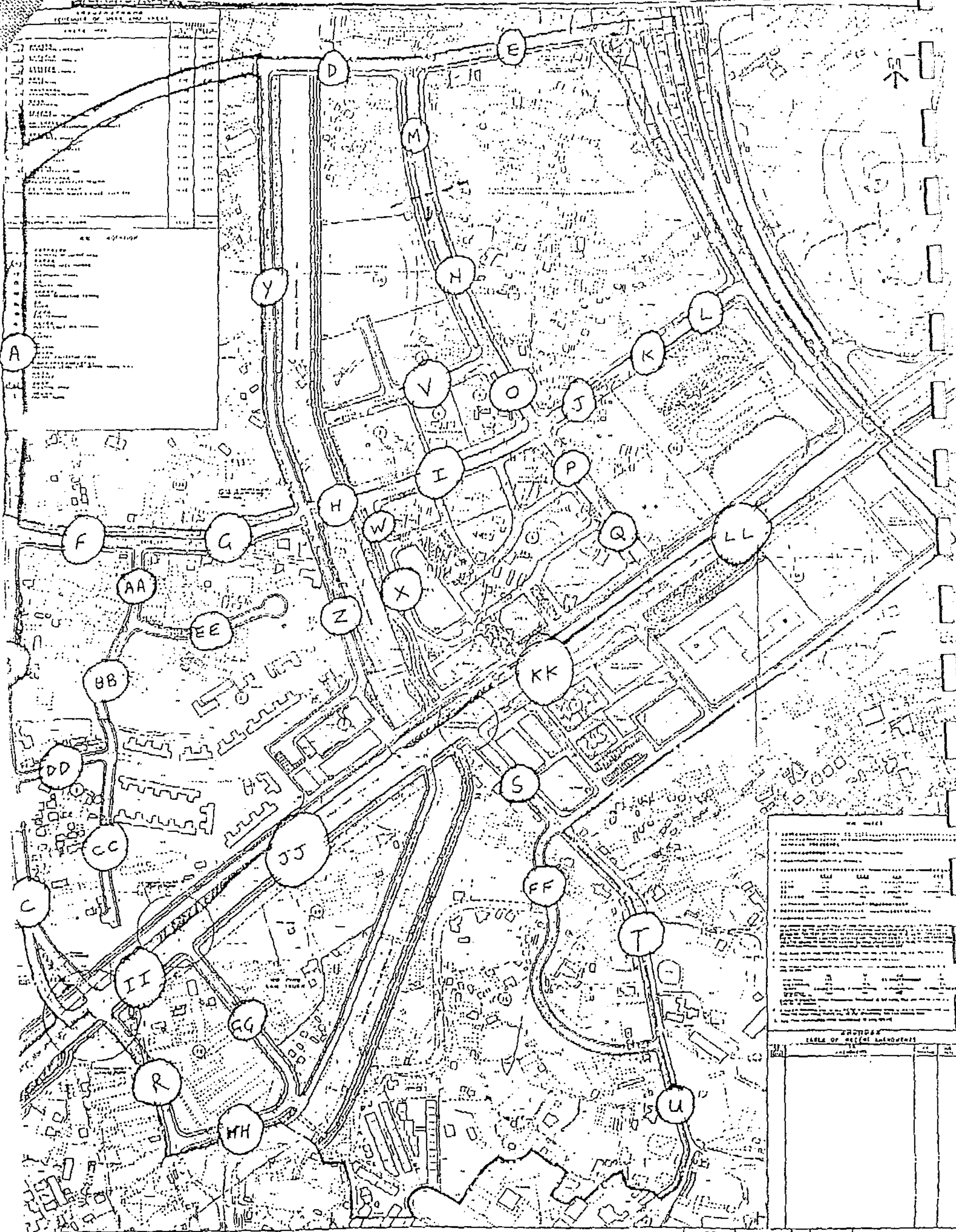
Table 2 2011 PM

Road	Location	Light Vehs/Hour				Good Veh's/hour	
		Car	Taxi	LGV	PV Tot	HGV 100%	GV Tot
D1	A	706	306	281	1293	472	472
	B	728	315	290	1333	478	478
	C	816	379	348	1603	515	515
D2	D	397	172	158	727	154	154
	E	607	263	242	1112	208	208
L1	F	35	28	15	78	10	10
	G	159	127	64	350	49	49
	H	155	124	62	341	42	42
	I	205	164	83	452	55	55
	J	241	193	96	530	54	54
	K	267	214	107	588	56	56
	L	282	225	113	620	52	52
L2	M	185	148	73	406	56	56
	N	93	75	37	205	41	41
	O	82	66	33	181	31	31
	P	133	106	53	292	33	33
	Q	66	53	27	146	17	17
L3	R	109	87	44	240	53	53
L4	S	168	135	67	370	36	36
	T	35	28	14	77	4	4
	U	35	28	14	77	4	4
L5	V	18	15	7	40	20	20
L6	W	106	85	42	233	41	41
	X	53	43	21	117	20	20
L11	Y	17	14	7	38	7	7
	/	49	39	19	101	11	11
L12	AA	135	108	54	297	38	38
	BB	124	99	49	272	35	35
	CC	18	15	7	40	2	2
	DD	124	99	49	272	38	38
L13	EE	18	15	7	40	2	2
L14	FF	71	57	28	156	10	10
L15	GG	60	48	24	132	50	50
	HH	60	48	24	132	50	50
CPR	II	741	321	294	1356	352	352
	JJ	669	290	265	1224	303	303
	KK	770	334	306	1410	318	318
	LL	809	350	322	1481	325	325

major	54.62%	23.66%	21.72%	(D1, D2, CPR)
minor (interior)	45.46%	36.36%	18.18%	

~~9904/NIA.WP/elo~~

10/04 '96 WED 19:37 [TX/RX NO 8789]



洪水橋－詳細設計佈圖
HUNG SHUI KIU - LAYOUT PLAN

DISTRICT PLANNING OFFICE
PLANNING DEPARTMENT

L/YL-HSK/7

Appendix 5

Typical Caline4 Result Files
for the Vehicular Emission Impact Assessment

```
1                       IBM-PC VERSION (1.90)
                        (C) COPYRIGHT 1987, TRINITY CONSULTANTS, INC.
                        SERIAL NUMBER 7997
                        SOLD TO E.H.S. CONSULTANTS LIMITED
                        RUN BEGAN ON 08-05-97 AT 00:11:44




          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Hung Shiu Kiu-traffic emission impact
              RUN: CO -AM           (WORST CASE ANGLE)
        POLLUTANT: CO


     I.  SITE VARIABLES

          U=   1.0 M/S              Z0=  10. CM             ALT=      0. (M)
        BRG= WORST CASE             VD=    .0 CM/S
       CLAS=     4 (D)              VS=    .0 CM/S
       MIXH=  500. M               AMB=    .0 PPM
      SIGTH=   12. DEGREES         TEMP= 25.5 DEGREE (C)


    II.  LINK VARIABLES

        LINK        *  LINK COORDINATES (M)   *                  EF      H      W
     DESCRIPTION    *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)    (M)    (M)
  ------------------*-------------------------*------------------------------------
  A. D              * 17544 33290 17672 33291 *  FL   1277   13.4    5.0   10.0
  B. E              * 17672 33291 17851 33317 *  FL   1915   13.4    5.0   10.0
  C. M              * 17672 33291 17690 33142 *  AG    684   14.6     .0   10.0
  D. N              * 17690 33142 17749 32998 *  AG    352   14.5     .0   10.0
  E. O              * 17749 32998 17797 32929 *  AG    296   14.5     .0   10.0
  F. P              * 17800 32930 17850 32808 *  AG    411   14.5     .0   10.0
  G. Q              * 17850 32808 17892 32799 *  AG    206   14.5     .0   10.0
  H. H              * 17522 32818 17591 32846 *  AG    537   14.6     .0   10.0
  I. I              * 17591 32846 17797 32929 *  FL    701   14.6    3.0   10.0
  J. JL             * 17797 32929 17987 33066 *  AG    817   14.6     .0   10.0
  K. FF             * 17803 32501 17813 32421 *  AG    184   14.6     .0   10.0
  L. FF             * 17813 32421 17797 32377 *  AG    184   14.6     .0   10.0
  M. T              * 17819 32527 17890 32456 *  AG     92   14.6     .0   10.0
  N. T              * 17890 32456 17911 32317 *  AG     92   14.6     .0   10.0
  O. U              * 17911 32317 17821 32532 *  AG     92   14.6     .0   10.0

1



          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Hung Shiu Kiu-traffic emission impact
              RUN: CO -AM           (WORST CASE ANGLE)
        POLLUTANT: CO


    III.  RECEPTOR LOCATIONS

               *    COORDINATES (M)
    RECEPTOR   *    X      Y      Z
  -------------*---------------------
  1. 2B5       *  17565  33286   5.0
  2. 5B5       *  17564  33284   5.0
```

```
  3. 10B5      *  17568  33279   5.0
  4. 2B6       *  17666  32880   3.0
  5. 5B6       *  17665  32883   3.0
  6. 10B6      *  17664  32888   3.0
  7. 2B7       *  17818  32461   1.5
  8. 5B7       *  17821  32462   1.5
  9. 10B7      *  17826  32463   1.5
 10. 5.5B8     *  17691  33284   5.0
 11. 105B8     *  17694  33281   5.0
 12. 5.5B9     *  17848  33314   5.0
 13. 10B9      *  17847  33310   5.0
 14. 5.5B10    *  17955  33059   1.5
 15. 10B10     *  17952  33062   1.5
 16. 5.511     *  17802  32948   1.5
 17. 10B11     *  17803  32953   1.5
 18. 5.512     *  17710  33129   1.5
 19. 10B12     *  17714  33131   1.5

1
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   3

                  JOB: Hung Shiu Kiu-traffic emission impact
                  RUN: CO -AM            (WORST CASE ANGLE)
            POLLUTANT: CO

    IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

               *        * PRED  *                  CONC/LINK
               *  BRG   * CONC  *                    (PPM)
    RECEPTOR   * (DEG)  * (PPM) *   A     B     C     D     E     F     G     H
  -------------*--------*-------*-------------------------------------------------
   1. 2B5      *   85.  *   2.4 *  2.1    .3    .0    .0    .0    .0    .0    .0
   2. 5B5      *   79.  *   1.7 *  1.5    .3    .0    .0    .0    .0    .0    .0
   3. 10B5     *   79.  *    .9 *   .6    .3    .0    .0    .0    .0    .0    .0
   4. 2B6      *   72.  *   1.5 *   .0    .0    .0    .0    .0    .0    .0    .0
   5. 5B6      *   80.  *    .9 *   .0    .0    .0    .0    .0    .0    .0    .0
   6. 10B6     *   82.  *    .5 *   .0    .0    .0    .0    .0    .0    .0    .0
   7. 2B7      *  195.  *    .2 *   .0    .0    .0    .0    .0    .0    .0    .0
   8. 5B7      *  356.  *    .1 *   .0    .0    .0    .0    .0    .0    .0    .0
   9. 10B7     *  357.  *    .2 *   .0    .0    .0    .0    .0    .0    .0    .0
  10. 5.5B8    *  282.  *   1.3 *   .8    .3    .1    .0    .0    .0    .0    .0
  11. 105B8    *  284.  *    .9 *   .7    .1    .1    .0    .0    .0    .0    .0
  12. 5.5B9    *  265.  *   3.6 *   .1   3.4    .0    .0    .0    .0    .0    .0
  13. 10B9     *  273.  *   2.2 *   .1   2.1    .0    .0    .0    .0    .0    .0
  14. 5.5B10   *  218.  *    .6 *   .0    .0    .0    .0    .0    .0    .0    .0
  15. 10B10    *  221.  *    .5 *   .0    .0    .0    .0    .0    .0    .0    .0
  16. 5.511    *  170.  *    .7 *   .0    .0    .0    .0    .0    .3    .0    .0
  17. 10B11    *  172.  *    .6 *   .0    .0    .0    .0    .0    .3    .0    .0
  18. 5.512    *  333.  *    .5 *   .1    .0    .4    .0    .0    .0    .0    .0
  19. 10B12    *  330.  *    .4 *   .1    .0    .3    .0    .0    .0    .0    .0

1
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   4

                  JOB: Hung Shiu Kiu-traffic emission impact
                  RUN: CO -AM            (WORST CASE ANGLE)
            POLLUTANT: CO
```

```
  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

                *                CONC/LINK
                *                  (PPM)
  RECEPTOR      *    I     J     K     L     M     N     O
 -------------*-----------------------------------------
  1. 2B5        *    .0    .0    .0    .0    .0    .0    .0
  2. 5B5        *    .0    .0    .0    .0    .0    .0    .0
  3. 10B5       *    .0    .0    .0    .0    .0    .0    .0
  4. 2B6        *   1.4    .1    .0    .0    .0    .0    .0
  5. 5B6        *    .9    .0    .0    .0    .0    .0    .0
  6. 10B6       *    .5    .0    .0    .0    .0    .0    .0
  7. 2B7        *    .0    .0    .1    .1    .0    .0    .0
  8. 5B7        *    .0    .0    .0    .0    .0    .0    .0
  9. 10B7       *    .0    .0    .0    .0    .0    .0    .0
 10. 5.5B8      *    .0    .0    .0    .0    .0    .0    .0
 11. 105B8      *    .0    .0    .0    .0    .0    .0    .0
 12. 5.5B9      *    .0    .0    .0    .0    .0    .0    .0
 13. 10B9       *    .0    .0    .0    .0    .0    .0    .0
 14. 5.5B10     *    .0    .6    .0    .0    .0    .0    .0
 15. 10B10      *    .0    .4    .0    .0    .0    .0    .0
 16. 5.511      *    .0    .4    .0    .0    .0    .0    .0
 17. 10B11      *    .0    .3    .0    .0    .0    .0    .0
 18. 5.512      *    .0    .0    .0    .0    .0    .0    .0
 19. 10B12      *    .0    .0    .0    .0    .0    .0    .0

1

 RUN ENDED ON 08-05-97 AT 00:12:03
```

```
1                         IBM-PC VERSION (1.90)
                          (C) COPYRIGHT 1987, TRINITY CONSULTANTS, INC.
                          SERIAL NUMBER 7997
                          SOLD TO E.H.S. CONSULTANTS LIMITED
                          RUN BEGAN ON 08-05-97 AT 00:26:14





               CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                        JUNE 1989 VERSION
                        PAGE   1

                    JOB: Hung Shiu Kiu-traffic emission impact
                    RUN: NO -AM            (WORST CASE ANGLE)
              POLLUTANT: NO


         I.  SITE VARIABLES

               U=   1.0 M/S              Z0=  10. CM             ALT=     0. (M)
             BRG= WORST CASE             VD=    .0 CM/S
            CLAS=      4 (D)             VS=    .0 CM/S
            MIXH=  500. M               AMB=    .0 PPM
           SIGTH=   12. DEGREES        TEMP= 25.5 DEGREE (C)


        II.  LINK VARIABLES

              LINK       *  LINK COORDINATES (M)    *                   EF     H      W
          DESCRIPTION    *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)    (M)
        -----------------*--------------------------*---------------------------------
         A. D            * 17544 33290 17672 33291 *  FL   1277    3.6    5.0  10.0
         B. E            * 17672 33291 17851 33317 *  FL   1915    3.4    5.0  10.0
         C. M            * 17672 33291 17690 33142 *  AG    684    3.0     .0  10.0
         D. N            * 17690 33142 17749 32998 *  AG    352    3.3     .0  10.0
         E. O            * 17749 32998 17797 32929 *  AG    296    3.0     .0  10.0
         F. P            * 17800 32930 17850 32808 *  AG    411    3.0     .0  10.0
         G. Q            * 17850 32808 17892 32799 *  AG    206    3.0     .0  10.0
         H. H            * 17514 32847 17591 32846 *  AG    537    2.9     .0  10.0
         I. I            * 17591 32846 17797 32929 *  FL    701    2.9    3.0  10.0
         J. JL           * 17797 32929 17987 33066 *  AG    817    2.8     .0  10.0
         K. FF           * 17803 32501 17813 32421 *  AG    184    2.6     .0  10.0
         L. FF           * 17813 32421 17797 32377 *  AG    184    2.6     .0  10.0
         M. T            * 17819 32527 17890 32456 *  AG     92    2.6     .0  10.0
         N. T            * 17890 32456 17911 32317 *  AG     92    2.6     .0  10.0
         O. U            * 17911 32317 17821 32532 *  AG     92    2.6     .0  10.0

1





               CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                        JUNE 1989 VERSION
                        PAGE   2

                    JOB: Hung Shiu Kiu-traffic emission impact
                    RUN: NO -AM            (WORST CASE ANGLE)
              POLLUTANT: NO


        III.  RECEPTOR LOCATIONS

                      *    COORDINATES (M)
          RECEPTOR    *    X      Y       Z
        --------------*--------------------
        1. 2B5        *  17565  33286   5.0
        2. 5B5        *  17564  33284   5.0
```

```
  3. 10B5       *  17568  33279   5.0
  4. 2B6        *  17666  32880   3.0
  5. 5B6        *  17665  32883   3.0
  6. 10B6       *  17664  32888   3.0
  7. 2B7        *  17818  32461   1.5
  8. 5B7        *  17821  32462   1.5
  9. 10B7       *  17826  32463   1.5
 10. 5.5B8      *  17691  33284   5.0
 11. 10B8       *  17694  33281   5.0
 12. 5.5B9      *  17848  33314   5.0
 13. 10B9       *  17847  33310   5.0
 14. 5.5B10     *  17955  33059   1.5
 15. 10B10      *  17952  33062   1.5
 16. 5.5B11     *  17802  32948   1.5
 17. 10B11      *  17803  32953   1.5
 18. 5.5B12     *  17710  33129   1.5
 19. 10B12      *  17714  33131   1.5

1


          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

               JOB: Hung Shiu Kiu-traffic emission impact
               RUN: NO -AM           (WORST CASE ANGLE)
         POLLUTANT: NO


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

                *        * PRED   *                CONC/LINK
                *  BRG   * CONC   *                  (PPM)
   RECEPTOR     * (DEG)  * (PPM)  *   A     B     C     D     E     F     G     H
 -------------*--------*--------*---------------------------------------------------
  1. 2B5        *   85.  *     .4 *   .3    .1    .0    .0    .0    .0    .0    .0
  2. 5B5        *   79.  *     .3 *   .2    .0    .0    .0    .0    .0    .0    .0
  3. 10B5       *   78.  *     .2 *   .1    .0    .0    .0    .0    .0    .0    .0
  4. 2B6        *   72.  *     .2 *   .0    .0    .0    .0    .0    .0    .0    .0
  5. 5B6        *   80.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
  6. 10B6       *   82.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
  7. 2B7        *  353.  *     .0 *   .0    .0    .0    .0    .0    .0    .0    .0
  8. 5B7        *  355.  *     .0 *   .0    .0    .0    .0    .0    .0    .0    .0
  9. 10B7       *  356.  *     .0 *   .0    .0    .0    .0    .0    .0    .0    .0
 10. 5.5B8      *  282.  *     .2 *   .1    .1    .0    .0    .0    .0    .0    .0
 11. 10B8       *  284.  *     .1 *   .1    .0    .0    .0    .0    .0    .0    .0
 12. 5.5B9      *  265.  *     .6 *   .0    .5    .0    .0    .0    .0    .0    .0
 13. 10B9       *  273.  *     .3 *   .0    .3    .0    .0    .0    .0    .0    .0
 14. 5.5B10     *  218.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
 15. 10B10      *  221.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
 16. 5.5B11     *  169.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
 17. 10B11      *  172.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
 18. 5.5B12     *  333.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0
 19. 10B12      *  330.  *     .1 *   .0    .0    .0    .0    .0    .0    .0    .0

1


          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   4

               JOB: Hung Shiu Kiu-traffic emission impact
               RUN: NO -AM           (WORST CASE ANGLE)
         POLLUTANT: NO
```

```
      IV.  MODEL RESULTS (WORST CASE WIND ANGLE)      (CONT.)

                     *              CONC/LINK
                     *                (PPM)
     RECEPTOR        *   I     J     K     L     M     N     O
   ------------------*-------------------------------------------
    1. 2B5           *   .0    .0    .0    .0    .0    .0    .0
    2. 5B5           *   .0    .0    .0    .0    .0    .0    .0
    3. 10B5          *   .0    .0    .0    .0    .0    .0    .0
    4. 2B6           *   .2    .0    .0    .0    .0    .0    .0
    5. 5B6           *   .1    .0    .0    .0    .0    .0    .0
    6. 10B6          *   .1    .0    .0    .0    .0    .0    .0
    7. 2B7           *   .0    .0    .0    .0    .0    .0    .0
    8. 5B7           *   .0    .0    .0    .0    .0    .0    .0
    9. 10B7          *   .0    .0    .0    .0    .0    .0    .0
   10. 5.5B8         *   .0    .0    .0    .0    .0    .0    .0
   11. 10B8          *   .0    .0    .0    .0    .0    .0    .0
   12. 5.5B9         *   .0    .0    .0    .0    .0    .0    .0
   13. 10B9          *   .0    .0    .0    .0    .0    .0    .0
   14. 5.5B10        *   .0    .1    .0    .0    .0    .0    .0
   15. 10B10         *   .0    .1    .0    .0    .0    .0    .0
   16. 5.5B11        *   .0    .0    .0    .0    .0    .0    .0
   17. 10B11         *   .0    .0    .0    .0    .0    .0    .0
   18. 5.5B12        *   .0    .0    .0    .0    .0    .0    .0
   19. 10B12         *   .0    .0    .0    .0    .0    .0    .0

  1

   RUN ENDED ON 08-05-97 AT 00:26:34
```

```
1                    IBM-PC VERSION (1.90)
                     (C) COPYRIGHT 1987, TRINITY CONSULTANTS, INC.
                     SERIAL NUMBER 7997
                     SOLD TO E.H.S. CONSULTANTS LIMITED
                     RUN BEGAN ON 08-05-97 AT 00:25:25




          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Hung Shiu Kiu-traffic emission impact
              RUN: RSP-AM             (WORST CASE ANGLE)
        POLLUTANT: RSP-AM
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

    I.  SITE VARIABLES

          U=   1.0 M/S              Z0=  10. CM             ALT=     0. (M)
        BRG= WORST CASE             VD=   .0 CM/S
       CLAS=     4 (D)              VS=   .0 CM/S
       MIXH=  500. M               AMB=   .0 PPM
      SIGTH=   12. DEGREES        TEMP= 25.5 DEGREE (C)

   II.  LINK VARIABLES

        LINK        *  LINK COORDINATES (M)     *               EF     H      W
     DESCRIPTION    *   X1    Y1    X2    Y2    * TYPE  VPH   (G/MI)  (M)    (M)
  ------------------*-------------------------*----------------------------------
  A. D              * 17544 33290 17672 33291 *  FL   1277     .3      .0   10.0
  B. E              * 17672 33291 17851 33317 *  FL   1915     .3      .0   10.0
  C. M              * 17672 33291 17690 33142 *  AG    684     .3      .0   10.0
  D. N              * 17690 33142 17749 32998 *  AG    352     .3      .0   10.0
  E. O              * 17749 32998 17797 32929 *  AG    296     .3      .0   10.0
  F. P              * 17800 32930 17850 32808 *  AG    411     .3      .0   10.0
  G. Q              * 17850 32808 17892 32799 *  AG    206     .3      .0   10.0
  H. H              * 17514 32847 17591 32846 *  AG    537     .2      .0   10.0
  I. I              * 17591 32846 17797 32929 *  FL    701     .2      .0   10.0
  J. JL             * 17797 32929 17987 33066 *  AG    817     .2      .0   10.0
  K. FF             * 17803 32501 17813 32421 *  AG    184     .2      .0   10.0
  L. FF             * 17813 32421 17797 32377 *  AG    184     .2      .0   10.0
  M. T              * 17819 32527 17890 32456 *  AG     92     .2      .0   10.0
  N. T              * 17890 32456 17911 32317 *  AG     92     .2      .0   10.0
  O. U              * 17911 32317 17821 32532 *  AG     92     .2      .0   10.0

1




          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Hung Shiu Kiu-traffic emission impact
              RUN: RSP-AM             (WORST CASE ANGLE)
        POLLUTANT: RSP-AM
        (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

  III.  RECEPTOR LOCATIONS

                *     COORDINATES (M)
    RECEPTOR    *     X       Y       Z
  --------------*----------------------
  1. 2B5        *  17565   33286     5.0
  2. 5B5        *  17564   33284     5.0
```

```
  3. 10B5     *  17568  33279   5.0
  4. 2B6      *  17666  32880   3.0
  5. 5B6      *  17665  32883   3.0
  6. 10B6     *  17664  32888   3.0
  7. 2B7      *  17818  32461   1.5
  8. 5B7      *  17821  32462   1.5
  9. 10B7     *  17826  32463   1.5
 10. 5.5B8    *  17691  33284   5.0
 11. 10B8     *  17694  33281   5.0
 12. 5.5B9    *  17848  33314   5.0
 13. 10B9     *  17847  33310   5.0
 14. 5.5B10   *  17955  33059   1.5
 15. 10B10    *  17952  33062   1.5
 16. 5.5B11   *  17802  32948   1.5
 17. 10B11    *  17803  32953   1.5
 18. 5.5B12   *  17710  33129   1.5
 19. 10B12    *  17714  33131   1.5


1



            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   3

                JOB: Hung Shiu Kiu-traffic emission impact
                RUN: RSP-AM           (WORST CASE ANGLE)
          POLLUTANT: RSP-AM
          (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                CONC/LINK
              *  BRG  * CONC  *                  (PPM)
   RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. 2B5      *   85. *  34.3 * 25.2  8.6   .5   .0   .0   .0   .0   .0
  2. 5B5      *   83. *  30.4 * 21.6  8.4   .5   .0   .0   .0   .0   .0
  3. 10B5     *   79. *  23.3 * 15.0  7.9   .4   .0   .0   .0   .0   .0
  4. 2B6      *   71. *  20.9 *   .0   .0   .0   .0   .3   .4   .0   .0
  5. 5B6      *   78. *  15.1 *   .0   .0   .0   .0   .1   .6   .0   .0
  6. 10B6     *   82. *  10.4 *   .0   .0   .0   .0   .1   .7   .0   .0
  7. 2B7      *  353. *   3.2 *   .3   .8   .3   .3   .2   .2   .0   .0
  8. 5B7      *  355. *   3.1 *   .2   .9   .2   .2   .2   .3   .0   .0
  9. 10B7     *  356. *   3.4 *   .1   .9   .2   .2   .2   .4   .0   .0
 10. 5.5B8    *   69. *  27.4 *   .0 27.4   .0   .0   .0   .0   .0   .0
 11. 10B8     *  283. *  22.1 * 16.7  2.8  2.7   .0   .0   .0   .0   .0
 12. 5.5B9    *  264. *  45.0 *  3.3 41.3   .4   .0   .0   .0   .0   .0
 13. 10B9     *  269. *  36.6 *  2.9 33.4   .3   .0   .0   .0   .0   .0
 14. 5.5B10   *  218. *  11.1 *   .0   .0   .0   .0   .0   .7   .0   .0
 15. 10B10    *  221. *   9.2 *   .0   .0   .0   .0   .1   .6   .0   .0
 16. 5.5B11   *  169. *  14.0 *   .0   .0   .0   .0   .1  6.8   .1   .0
 17. 10B11    *  172. *  11.9 *   .0   .0   .0   .0   .0  5.5   .0   .0
 18. 5.5B12   *  333. *   9.8 *  2.6   .1  7.1   .0   .0   .0   .0   .0
 19. 10B12    *  330. *   8.7 *  2.7   .0  6.0   .0   .0   .0   .0   .0


1



            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   4

                JOB: Hung Shiu Kiu-traffic emission impact
                RUN: RSP-AM           (WORST CASE ANGLE)
          POLLUTANT: RSP-AM
```

```
            (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

     IV.  MODEL RESULTS (WORST CASE WIND ANGLE)      (CONT.)

                  *              CONC/LINK
                  *                (PPM)
     RECEPTOR     *   I     J     K     L     M     N     O
    --------------*-------------------------------------------
     1. 2B5       *   .0    .0    .0    .0    .0    .0    .0
     2. 5B5       *   .0    .0    .0    .0    .0    .0    .0
     3. 10B5      *   .0    .0    .0    .0    .0    .0    .0
     4. 2B6       * 18.1   2.1    .0    .0    .0    .0    .0
     5. 5B6       * 13.6    .8    .0    .0    .0    .0    .0
     6. 10B6      *  9.1    .5    .0    .0    .0    .0    .0
     7. 2B7       *   .5    .2    .3    .0    .1    .0    .1
     8. 5B7       *   .4    .3    .1    .0    .2    .0    .2
     9. 10B7      *   .3    .4    .0    .0    .3    .0    .4
    10. 5.5B8     *   .0    .0    .0    .0    .0    .0    .0
    11. 10B8      *   .0    .0    .0    .0    .0    .0    .0
    12. 5.5B9     *   .0    .0    .0    .0    .0    .0    .0
    13. 10B9      *   .0    .0    .0    .0    .0    .0    .0
    14. 5.5B10    *   .1  10.3    .0    .0    .0    .0    .0
    15. 10B10     *   .4   8.2    .0    .0    .0    .0    .0
    16. 5.5B11    *   .1   6.8    .0    .0    .1    .1    .1
    17. 10B11     *   .1   6.0    .0    .0    .1    .1    .1
    18. 5.5B12    *   .0    .0    .0    .0    .0    .0    .0
    19. 10B12     *   .0    .0    .0    .0    .0    .0    .0

   1

   RUN ENDED ON 08-05-97 AT 00:25:45
```

```
1                         IBM-PC VERSION (1.90)
                          (C) COPYRIGHT 1987, TRINITY CONSULTANTS, INC.
                          SERIAL NUMBER 7997
                          SOLD TO E.H.S. CONSULTANTS LIMITED
                          RUN BEGAN ON 08-05-97 AT 00:30:12





               CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                        JUNE 1989 VERSION
                        PAGE   1

                    JOB: Hung Shiu Kiu-traffic emission impact
                    RUN: RSP-PM              (WORST CASE ANGLE)
              POLLUTANT: RSP-PM
              (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

        I.  SITE VARIABLES

               U=   1.0 M/S              Z0=  10. CM             ALT=      0. (M)
             BRG= WORST CASE             VD=    .0 CM/S
            CLAS=      6 (F)             VS=    .0 CM/S
            MIXH=  500. M               AMB=    .0 PPM
           SIGTH=     5. DEGREES       TEMP= 25.5 DEGREE (C)

       II.  LINK VARIABLES

            LINK       *  LINK COORDINATES (M)    *                  EF      H      W
         DESCRIPTION   *   X1     Y1     X2     Y2  * TYPE  VPH  (G/MI)   (M)    (M)
      ---------------*------------------------*---------------------------------
      A. D            * 17544 33290 17672 33291 *  FL    881     .3       .0  10.0
      B. E            * 17672 33291 17851 33317 *  FL   1320     .3       .0  10.0
      C. M            * 17672 33291 17690 33142 *  AG    462     .3       .0  10.0
      D. N            * 17690 33142 17749 32998 *  AG    246     .4       .0  10.0
      E. O            * 17749 32998 17797 32929 *  AG    212     .4       .0  10.0
      F. P            * 17800 32930 17850 32808 *  AG    325     .3       .0  10.0
      G. Q            * 17850 32808 17892 32799 *  AG    163     .3       .0  10.0
      H. H            * 17514 32847 17591 32846 *  AG    383     .3       .0  10.0
      I. I            * 17591 32846 17797 32929 *  FL    507     .3       .0  10.0
      J. JL           * 17797 32929 17987 33066 *  AG    672     .3       .0  10.0
      K. FF           * 17803 32501 17813 32421 *  AG    186     .3       .0  10.0
      L. FF           * 17813 32421 17797 32377 *  AG    186     .2       .0  10.0
      M. T            * 17819 32527 17890 32456 *  AG     81     .3       .0  10.0
      N. T            * 17890 32456 17911 32317 *  AG     81     .3       .0  10.0
      O. U            * 17911 32317 17821 32532 *  AG     81     .3       .0  10.0

1



               CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                        JUNE 1989 VERSION
                        PAGE   2

                    JOB: Hung Shiu Kiu-traffic emission impact
                    RUN: RSP-PM              (WORST CASE ANGLE)
              POLLUTANT: RSP-PM
              (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

      III.  RECEPTOR LOCATIONS

                    *     COORDINATES (M)
        RECEPTOR    *     X       Y      Z
      ------------*---------------------
      1. 2B5        *  17565   33286    5.0
      2. 5B5        *  17564   33284    5.0
```

```
  3. 10B5     *  17568  33279   5.0
  4. 2B6      *  17666  32880   3.0
  5. 5B6      *  17665  32883   3.0
  6. 10B6     *  17664  32888   3.0
  7. 2B7      *  17818  32461   1.5
  8. 5B7      *  17821  32462   1.5
  9. 10B7     *  17826  32463   1.5
 10. 5.5B8    *  17691  33284   5.0
 11. 10B8     *  17694  33281   5.0
 12. 5.5B9    *  17848  33314   5.0
 13. 10B9     *  17847  33310   5.0
 14. 5.5B10   *  17955  33059   1.5
 15. 10B10    *  17952  33062   1.5
 16. 5.5B11   *  17802  32948   1.5
 17. 10B11    *  17803  32953   1.5
 18. 5.5B12   *  17710  33129   1.5
 19. 10B12    *  17714  33131   1.5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            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   3

                JOB: Hung Shiu Kiu-traffic emission impact
                RUN: RSP-PM            (WORST CASE ANGLE)
          POLLUTANT: RSP-PM
          (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *               CONC/LINK
              *  BRG  * CONC  *                  (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. 2B5      *   86. *  48.3 * 31.0 16.7   .6   .0   .0   .0   .0   .0
  2. 5B5      *   84. *  42.5 * 25.9 16.2   .4   .0   .0   .0   .0   .0
  3. 10B5     *   82. *  31.3 * 13.7 17.2   .3   .0   .0   .0   .0   .0
  4. 2B6      *   70. *  31.2 *   .0   .0   .0   .0   .4   .6   .0   .0
  5. 5B6      *   74. *  20.8 *   .0   .0   .0   .0   .1   .9   .0   .0
  6. 10B6     *   77. *  13.5 *   .0   .0   .0   .0   .1  1.0   .0   .0
  7. 2B7      *  360. *   5.1 *   .0  1.6   .0   .0   .1  1.4   .0   .0
  8. 5B7      *  360. *   5.6 *   .0  1.5   .0   .0   .1  1.4   .0   .0
  9. 10B7     *  359. *   6.3 *   .0  1.7   .0   .0   .1  1.5   .0   .0
 10. 5.5B8    *   74. *  30.6 *   .0 30.6   .0   .0   .0   .0   .0   .0
 11. 10B8     *  278. *  23.5 * 20.7   .1  2.7   .0   .0   .0   .0   .0
 12. 5.5B9    *  264. *  61.2 *  6.9 54.0   .4   .0   .0   .0   .0   .0
 13. 10B9     *  266. *  47.6 *  6.4 40.9   .3   .0   .0   .0   .0   .0
 14. 5.5B10   *  226. *  15.8 *   .0   .0   .0   .0   .0  1.0   .0   .0
 15. 10B10    *  225. *  13.1 *   .0   .0   .0   .0   .0  1.0   .0   .0
 16. 5.5B11   *  166. *  19.0 *   .0   .0   .0   .0   .0 11.2   .0   .0
 17. 10B11    *  170. *  15.8 *   .0   .0   .0   .0   .0  8.1   .0   .0
 18. 5.5B12   *  341. *  11.5 *  2.7   .1  8.7   .0   .0   .0   .0   .0
 19. 10B12    *  339. *  10.1 *  2.8   .1  7.3   .0   .0   .0   .0   .0


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            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   4

                JOB: Hung Shiu Kiu-traffic emission impact
                RUN: RSP-PM            (WORST CASE ANGLE)
          POLLUTANT: RSP-PM
```

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              (NOTE: OUTPUT IN MICRO-GRAMS/METER**3. IGNORE PPM LABEL)

       IV.  MODEL RESULTS (WORST CASE WIND ANGLE)      (CONT.)

                    *              CONC/LINK
                    *                (PPM)
       RECEPTOR     *   I     J     K     L     M     N     O
      ------------*-------------------------------------------
       1. 2B5       *   .0    .0    .0    .0    .0    .0    .0
       2. 5B5       *   .0    .0    .0    .0    .0    .0    .0
       3. 10B5      *   .0    .0    .0    .0    .0    .0    .0
       4. 2B6       * 27.0   3.2    .0    .0    .0    .0    .0
       5. 5B6       * 18.6   1.1    .0    .0    .0    .0    .0
       6. 10B6      * 11.7    .7    .0    .0    .0    .0    .0
       7. 2B7       *   .1   1.3    .0    .0    .3    .0    .3
       8. 5B7       *   .1   1.4    .0    .0    .4    .0    .6
       9. 10B7      *   .1   1.3    .0    .0    .6    .0    .9
      10. 5.5B8     *   .0    .0    .0    .0    .0    .0    .0
      11. 10B8      *   .0    .0    .0    .0    .0    .0    .0
      12. 5.5B9     *   .0    .0    .0    .0    .0    .0    .0
      13. 10B9      *   .0    .0    .0    .0    .0    .0    .0
      14. 5.5B10    *   .3  14.5    .0    .0    .0    .0    .0
      15. 10B10     *   .3  11.7    .0    .0    .0    .0    .0
      16. 5.5B11    *   .0   7.6    .0    .0    .0    .1    .0
      17. 10B11     *   .0   6.9    .0    .0    .1    .3    .3
      18. 5.5B12    *   .0    .0    .0    .0    .0    .0    .0
      19. 10B12     *   .0    .0    .0    .0    .0    .0    .0

    1

     RUN ENDED ON 08-05-97 AT 00:30:31
```

Appendix 6

Sample for Calculation on Construction Noise Impact

Un-mitigated

Construction Noise Impact at Hung Shui Kiu (without mitigation measures)								
Distance from source	**e.g.**	8.5	m					
Stage I	**Site Clearance Work, Excavation for Road Alignment**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	115	1	26.6	0.0	50.0	3.0	85.4
	or							
CNP 141	Lorry	112	1	26.6	0.0	25.0	6.0	79.4
CNP 081	Excavator	112	1	26.6	0.0	25.0	6.0	79.4
	Cumulative PNL =	85.4						
	Correction for facade =	3.0						
	CNL =	88.4	dB(A)					
Stage 3	**Installation of Underground Drains, Services Utilities & Manhole**							
	Equipment used at one working zone							
	PME used	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 141	Lorry	112	1	26.6	0.0	25.0	6.0	79.4
CNP 048	Mobile Crane	112	1	26.6	0.0	25.0	6.0	79.4
	or							
CNP 047	Concrete Mixer	109	1	26.6	0.0	50.0	3.0	79.4
CNP 170	Poker	113	1	26.6	0.0	50.0	3.0	83.4
CNP 102	Generator	100	1	26.6	0.0	100.0	0.0	73.4
	Cumulative PNL =	85.1						
	Correction for facade =	3.0						
	CNL =	88.1	dB(A)					
Stage 4	**Formation of road sub-base**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	115	1	26.6	0.0	50.0	3.0	85.4
CNP 141	Lorry	112	1	26.6	0.0	25.0	6.0	79.4
	or							
CNP 185	Road roller	108	1	26.6	0.0	50.0	3.0	78.4
	Cumulative PNL =	86.4						
	Correction for facade =	3.0						
	CNL =	89.4	dB(A)					
Stage 5	**Road surfacing and finishing works (2 months)**							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 021	Bar Bender	90	1	26.6	0.0	25.0	6.0	57.4
CNP 141	Lorry	112	1	26.6	0.0	25.0	6.0	79.4
	or							
CNP 044	Concrete Lorry Mixer	109	1	26.6	0.0	25.0	6.0	76.4
CNP 047	Concrete Pump	109	1	26.6	0.0	25.0	6.0	76.4
CNP 170	Poker	113	1	26.6	0.0	25.0	6.0	80.4
	or							
CNP 004	Asphalt paver	109	1	26.6	0.0	50.0	3.0	79.4
CNP 185	Road roller	108	1	26.6	0.0	50.0	3.0	78.4
	Cumulative PNL =	82.9						
	Correction for facade =	3.0						
	CNL =	85.9	dB(A)					
NSR	**Distance from source**	**Stage 1**	**Stage 3**	**Stage 4**	**Stage 5**			
C3	**8.5**	**88.4**	**88.1**	**89.4**	**85.9**			

Silenced

Construction Noise Impact at Hung Shui Kiu (with silenced equipment)								
Distance from source	e.g.	8.5	m					
Stage 1	**Site Clearance Work, Excavation for Road Alignment**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	100	1	26.6	0.0	50.0	3.0	70.4
	or							
CNP 141	Lorry	100	1	26.6	0.0	25.0	6.0	67.4
CNP 081	Excavator	112	1	26.6	0.0	25.0	6.0	79.4
	Cumulative PNL =	79.7						
	Correction for facade =	3.0						
	CNL =	82.7	dB(A)					
Stage 3	**Installation of Underground Drains, Services Utilities & Manhole**							
	Equipment used at one working zone							
	PME used	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 141	Lorry	110	1	26.6	0.0	25.0	6.0	77.4
CNP 048	Mobile Crane	105	1	26.6	0.0	25.0	6.0	72.4
	or							
CNP 047	Concrete Pump	105	1	26.6	0.0	50.0	3.0	75.4
CNP 170	Poker	110	1	26.6	0.0	50.0	3.0	80.4
CNP 102	Generator	100	1	26.6	0.0	100.0	0.0	73.4
	Cumulative PNL =	82.2						
	Correction for facade =	3.0						
	CNL =	85.2	dB(A)					
Stage 4	**Formation of road sub-base**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	100	1	26.6	0.0	50.0	3.0	70.4
CNP 141	Lorry	110	1	26.6	0.0	25.0	6.0	77.4
	or							
CNP 185	Road roller	108	1	26.6	0.0	50.0	3.0	78.4
	Cumulative PNL =	78.4						
	Correction for facade =	3.0						
	CNL =	81.4	dB(A)					
Stage 5	**Road surfacing and finishing works (2 months)**							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 021	Bar Bender	90	1	26.6	0.0	25.0	6.0	57.4
CNP 141	Lorry	110	1	26.6	0.0	25.0	6.0	77.4
	or							
CNP 044	Concrete Lorry Mixer	109	1	26.6	0.0	25.0	6.0	76.4
CNP 047	Concrete Pump	105	1	26.6	0.0	25.0	6.0	72.4
CNP 170	Poker	110	1	26.6	0.0	25.0	6.0	77.4
	or							
CNP 004	Asphalt paver	109	1	26.6	0.0	50.0	3.0	79.4
CNP 185	Road roller	108	1	26.6	0.0	50.0	3.0	78.4
	Cumulative PNL =	81.9						
	Correction for facade =	3.0						
	CNL =	84.9	dB(A)					
NSR	**Distance from source**	**Stage 1**	**Stage 3**	**Stage 4**	**Stage 5**			
C3	8.5	**82.7**	**85.2**	**81.4**	**84.9**			

Construction Noise Impact at Hung Shui Kiu (with silenced & screened equipment)								
Distance from source	**e.g.**	8.5	m					
Stage 1	**Site Clearance Work, Excavation for Road Alignment**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	100	1	26.6	5.0	50.0	3.0	65.4
	or							
CNP 141	Lorry	100	1	26.6	5.0	25.0	6.0	62.4
CNP 081	Excavator	112	1	26.6	5.0	25.0	6.0	74.4
	Overall SWL, dB(A)							
	Cumulative PNL =	74.7						
	Correction for facade =	3.0						
	CNL =	77.7	dB(A)					
Stage 3	**Installation of Underground Drains, Services Utilities & Manhole**							
--	**Equipment used at one working zone**							
	PME used	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 141	Lorry	110	1	26.6	5.0	25.0	6.0	72.4
CNP 048	Mobile Crane	105	1	26.6	10.0	25.0	6.0	62.4
	or							
CNP 047	Concrete Pump	105	1	26.6	10.0	50.0	3.0	65.4
CNP 170	Poker	110	1	26.6	10.0	50.0	3.0	70.4
CNP 102	Generator	100	1	26.6	10.0	100.0	0.0	63.4
	Overall SWL, dB(A)							
	Cumulative PNL =	72.8						
	Correction for facade =	3.0						
	CNL =	75.8	dB(A)					
Stage 4	**Formation of road sub-base**							
	Equipment used at one working zone							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 030	Bulldozer	100	1	26.6	5.0	50.0	3.0	65.4
CNP 141	Lorry	110	1	26.6	5.0	25.0	6.0	72.4
	or							
CNP 185	Road roller	108	1	26.6	5.0	50.0	3.0	73.4
	Overall SWL, dB(A)							
	Cumulative PNL =	73.4						
	Correction for facade =	3.0						
	CNL =	76.4	dB(A)					
Stage 5	**Road surfacing and finishing works (2 months)**							
I.D. Code	**PME used**	**SWL, dB(A)**	**Nos. used**	**Dist. Attn.,dB(A)**	**Screening**	**% on time**	**Correction, dB(A)**	**SPL at NSR, dB(A)**
CNP 021	Bar Bender	90	1	26.6	5.0	25.0	6.0	52.4
CNP 141	Lorry	110	1	26.6	5.0	25.0	6.0	72.4
	or							
CNP 044	Concrete Lorry Mixer	109	1	26.6	5.0	25.0	6.0	71.4
CNP 047	Concrete Pump	105	1	26.6	10.0	25.0	6.0	62.4
CNP 170	Poker	110	1	26.6	10.0	25.0	6.0	67.4
	or							
CNP 004	Asphalt paver	109	1	26.6	5.0	50.0	3.0	74.4
CNP 185	Road roller	108	1	26.6	5.0	50.0	3.0	73.4
	Overall SWL, dB(A)							
	Cumulative PNL =	76.9						
	Correction for facade =	3.0						
	CNL =	79.9	dB(A)					
NSR	**Distance from source**	**Stage 1**	**Stage 3**	**Stage 4**	**Stage 5**			
C3	8.5	77.7	75.8	76.4	79.9			

Appendix 7

Construction Noise Impact

Sample on Calculation of “Period of Exceedance” at NSRs after the use of silenced PME and Mobile Noise Barriers/ Enclosures as Mitigation Measures

APPENDIX

Sample on calculation of "Period of Exceedance" at the affected NSRs during construction phase						
NSR	**Distance from source**	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Phase 5**
C2	6.5	80.0	N/A	78.1	78.7	82.3
Stage 1	**Site Clearance Work, Excavation for Road Alignment**					
	Rate of Roadworks	**15**	**m/day**			
Day	Distance of NSR from noise source (m)	**PNL, dB(A)**	Max. Period of Exceedance (day)			
1	30.7	66.5	**1.5**			
1.5	23.4	68.9				
2	16.3	72.0				
2.5	9.9	76.3				
2.75	7.5	**78.7**				
3	6.5	**80.0**				
3.25	7.5	**78.7**				
3.5	9.9	76.3				
4	16.3	72.0				
4.5	23.4	68.9				
5	30.7	66.5				
Phase 3	**Installation of Underground Drains, Services Utilities & Manhole**					
	Rate of Roadworks	**10**	**m/day**			
Day	Distance of NSR from noise source (m)	**PNL, dB(A)**	Max. Period of Exceedance (day)			
1	21.0	67.9	**1.5**			
1.5	16.3	70.1				
2	11.9	72.9				
2.5	8.2	76.1				
2.75	7.0	**77.5**				
3	6.5	**78.1**				
3.25	7.0	**77.5**				
3.5	8.2	76.1				
4	11.9	72.9				
4.5	16.3	70.1				
5	21.0	67.9				
Phase 4	**Formation of road sub-base**					
	Rate of Roadworks	**50**	**m/day**			
Day	Distance of NSR from noise source (m)	**PNL, dB(A)**	Max. Period of Exceedance (day)			
1	100.2	55.0	**0.4**			
1.5	75.3	57.4				
2	50.4	60.9				
2.5	25.8	66.7				
2.75	14.1	72.0				
3	6.5	**78.7**				
3.25	14.1	72.0				
3.5	25.8	66.7				
4	50.4	60.9				
4.5	75.3	57.4				
5	100.2	55.0				
Phase 5	**Road surfacing and finishing works (2 months)**					
	Rate of Roadworks	**25**	**m/day**			
Day	Distance of NSR from noise source (m)	**PNL, dB(A)**	Max. Period of Exceedance (day)			
1	50.4	64.5	**1**			
1.5	38.1	66.9				
2	25.8	70.3				
2.5	14.1	75.5				
2.75	9.0	**79.4**				
3	6.5	**82.3**				
3.25	9.0	**79.4**				
3.5	14.1	75.5				
4	25.8	70.3				
4.5	38.1	66.9				
5	50.4	64.5				

Appendix 8

Letter from the HKHS

香港房屋協會
HONG KONG HOUSING SOCIETY
Founded 1948
Incorporated by Government Ordinance 1951

Our Reference DKSL/HSK-810-001(2/96)/jc

Your Reference
26 February 1996

EHS Consultants Limited
22/F Loyong Court Commercial Bldg
220 Lockhart Road
Hong Kong

Attn: Dr Sarah Liao

Dear Sirs

Proposed Housing Development in Hung Shui Kiu Area 13

Thank you for your letter of 7 February 1996.

Please be advised that the proposed development is still under preliminary planning stage and as such no detailed building design has been formulated. For your reference, I have enclosed the latest approved planning brief in respect of the project. It should be noted that the site will be zoned for "Residential (Group A)" in the Ping Shan Outline Zoning Plan.

Incidentally, I append hereunder the proposed development programme for your information:-

	Target Commencement Date	Target Completion Date
Phase I	Late 1999	2002
Phase II	Early 2000	2002

Please feel free to contact me should you need any further assistance.

Yours faithfully

Daniel Lau
Property Development Manager

總辦事處：香港銅鑼灣告士打道280號世界貿易中心29樓 電話：2839 7888 圖文傳真：2882 2001
Head Office: 29th Floor, World Trade Centre, 280 Gloucester Road, Causeway Bay, Hong Kong. Tel: 2839 7888 Fax: 2882 2001

" Extracted from the Planning Brief of the Rural Public Housing Esta

4. Site Constraints and Opportunities

4.1 Constraints

The constraints on the development of Area 13 for rental housing are summarized below:

(a) Land Status and Tenure

The proposed site is largely held under private ownership. It will have to be resummed and the estimated time required for land resumption is about 28 months from the date of submission of Clearance Application Form.

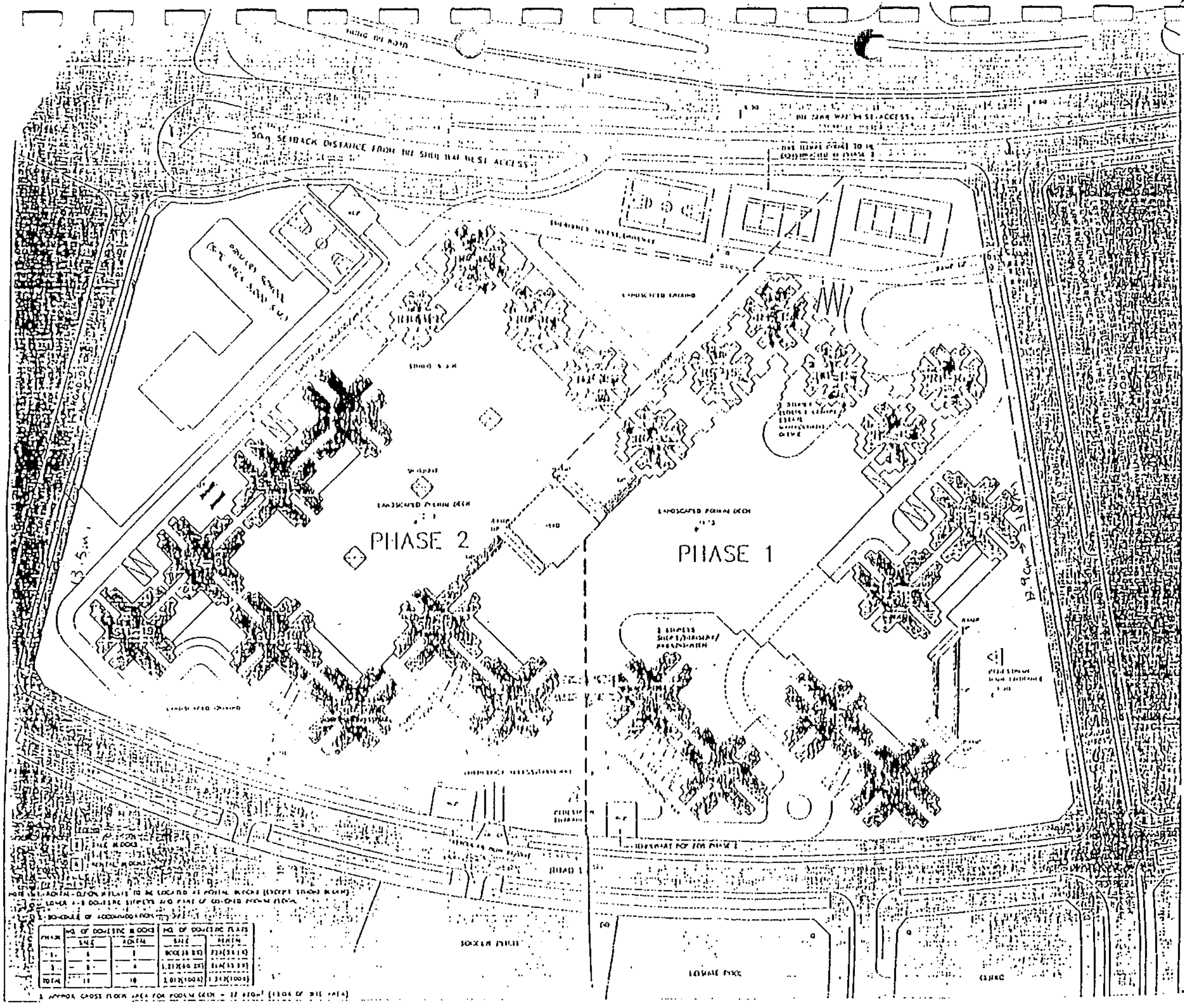
(b) Noise and Air Pollution

The eastern side of the proposed estate will be facing the Tin Shui Wai West Access which is one of the major access in and out of Tin Shui Wai New Town. The access is linked to a flyover (PWP Item No. 308THB) across Castle Peak Road joining TSW West Access and the Yuen Long Highway which lands at the southern part of the site. This would be a major source of noise pollution. Given the proposed flyover development and the heavy traffic on the TSW West Access, building setback of 50m is proposed as a noise buffer as well as the provision of a 4m high-120m long noise barrier wall along the West Access has been included as part of the project. The development should also make full use of suitable noise tolerant shielding elements such as commercial centre, multi-storey carparks or landscape features etc. to screen the residential block from the roads. Furthermore, the residential blocks should be positioned and designed so that the angle of view of the roads from the noise sensitive portion of the buildings could be minimized. Moreover, the proposed housing development may also subject to possible air pollution. A possible source of air pollution will be from the emission of vehicles using the West Access. Another source of air pollution is possibly from the smoke emitted from chimneys at the Kiu Tau Wai Industrial Area in the North-east. It is suggested that HKHS should explore all potential mitigation measures and solutions in consultation with EPD when undertaking the Environmental Impact Assessment during the detailed design stage.

(c) Visual Intrusion

The main source of visual intrusion will be from the container storage depots in the north and north-east many of which are in existence prior to the gazetting the draft Ping Shan Development Permission Area Plan. These container storage yards are tolerated under the Town Planning Ordinance. Containers stacked seven high will block off some of the view of the residents. The proposed flyover from Yuen Long Highway across Castle Peak Road that land onto the West Access right in front of the site is another source of visual intrusion.

Appendix 4



SCHEDULE OF ACCOMMODATION

PHASE	NO. OF DOMESTIC BLOCKS		NO. OF DOMESTIC FLATS	
	SALE	RENTAL	SALE	RENTAL
1	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	11	10	[illegible] (100%)	[illegible] (100%)

LEGEND

- Sale Blocks
- Rental Blocks
- Primary School
- Shops / Nursery / Kindergarten
- Elderly Centre / Estate Management Office

CLIENT :
HONG KONG HOUSING SOCIETY

ARCHITECT :
HO & PARTNERS ARCHITECTS

PROJECT NAME
HOUSING DEVELOPMENT AT
HUNG SHUI KIU - AREA 13

SCALE:
1 : 200
DRAWN BY :
R.L.

DATE:
15.4.1995
CHECKED BY :

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Appendix 9

Site-specific Pollution Control Clauses

Proposed Environmental Pollution Clauses
for
Hung Shiu Kiu Development

1. GENERAL SPECIFICATION FOR ENVIRONMENTAL PROTECTION

(a) All works are to be carried out in such a manner as to cause as little inconvenience as possible to nearby residents, properties and to the public in general, and the Contractor shall be held responsible for any claims which may arise from such inconvenience.

(b) Water shall be used to prevent dust rising and the Contractor shall take every precaution to prevent the excavated materials from entering into public drainage system

(c) The Contractor shall carry out the Works in such a manner as to minimise adverse impacts on the environment during execution of the Works.

(d) The Contractor shall comply with all current legislation and regulations including:-

- Noise Control Ordinance (Cap 400)
- Air Pollution Control Ordinance (Cap 311)
- Water Pollution Control Ordinance (Cap 358)
- Dumping at Sea Act 1974 (Overseas Territory Order) 1975
- Merchant Shipping (Oil Pollution) (Hong Kong) Order 1975
- Summary Offences Ordinance (Cap 228)
- Factories and Industrial Undertakings Ordinance (Cap 59)
- Waste Disposal Ordinance (Cap 354)
- Public Cleansing and Prevention of Nuisances (Regional Council) By-Laws (Cap 132)
- Public Cleansing and Prevention of Nuisances (Urban Council) By-Laws (Cap 132)
- Building Ordinance (Cap 123)
- Building Ordinance (Application to New Territories) Ordinance (Cap 121)
- Public Health and Municipal Services Ordinance (Cap 132)
- Waste Disposal (Chemical Waste) (General) Regulation (Cap 354)

(e) The provisions of this section shall not be applicable in the case of emergency work necessary for the saving of life or property or the safety of the Works.

(f) The Contractor shall be responsible for ensuring no earth, rock or debris is deposited on public or private rights of way as a result of its operation, including any deposits arising from the movement of plant or vehicles. For site formation works the Contractor shall provide a washpit or a wheel washing and/or vehicle cleaning facility at all the exists from the Site. Water in wheel washing facilities shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall provide a hard surfaced road between the wheel washing facilities, and the public or private right of way onto which the exit joins.

(g) The Contractor shall at all times ensure that all existing stream courses and drains within and adjacent to the site are kept safe and free from any debris and any excavated materials arising from the Works. The Contractor shall ensure that chemicals and concrete agitator washings are not deposited in watercourses.

(h) All water and other liquid waste products arising on the Site shall be collected, removed from Site via a suitable and properly designed temporary drainage system and disposed of at a location and in a manner that shall not cause either pollution or nuisance. In addition, the effluents shall comply with the standards stated in the "Technical Memorandum on Standards for Effluent discharged into Drainage and Sewerage System, Inland and Coastal Waters" for the appropriate Water Control Zone, whether or not the Zone has been declared as one subject to control of discharges.

(i) The Contractor shall construct, maintain, remove and reinstate as necessary temporary drainage works and take all other precautions necessary for the avoidance of damage to works of adjacent contracts or to adjacent properties by flooding and silt washed down from the Works. He shall also provide adequate precautions to ensure that no spoil or debris of any kind is allowed to be pushed, washed down, fall or be deposited on land adjacent to the Site.

(j) In the event of any spoil or debris from the Works being deposited on adjacent land or any silt washed down to any area, then all such spoil, debris and silt shall be immediately removed and the affected land and areas restored to their natural state by the Contractor to the satisfaction of the Resident Engineer.

(k) No burning of debris, construction wastes or vegetation shall be allowed on the Site.

(l) The Contractor shall segregate construction waste materials into inert and non-inert and chemical waste categories, and he shall dispose of them as follows:-

- Inert construction waste material when deemed suitable for reclamation or land formation shall be disposed of at public dumping areas.

- Inert material deemed unsuitable for reclamation or land formation and non-inert construction waste material shall be disposed of at public landfills.

- Chemical wastes as defined by Schedule 1 of the Waste Regulations (Chemical) 1992, should be stored in accordance with approved methods defined in the Regulations and the chemical waste disposed of at the Chemical Waste Treatment Facility located at Tsing Yi.

(m) All constructional Plant and equipment used on the Contract shall be fitted with a means of suppressing radio and television interference to the satisfaction of the Resident Engineer.

(n) The Resident Engineer may require construction plant and equipment intended to be used on the Works to be made available for inspection and approval to ensure that it meets the requisite environmental standards.

(o) The Contractor shall not install any furnace, boiler or other similar plant or equipment using any fuel that may produce air pollutants without the prior written consent of the Director of Environmental Protection (DEP) pursuant to the Air Pollution Control Ordinance.

(p) The Contractor shall arrange methods of working to minimise noise impacts, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.

(q) The Contractor shall devise, arrange methods of working and carry out the works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.

(r) The Contractor shall ensure that all plant and equipment to be used on the site are properly maintained in good operating condition and noisy construction activities shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings, shields acoustic sheds, screens or other means to avoid disturbance to any nearby noise sensitive receivers.

(s) Notwithstanding the requirements and limitations set out in clause (h) above and subject to compliance with clauses (s) and (t) above, the Resident Engineer may upon application in writing by the Contractor, allow the use of any equipment and the carrying out of any construction activities for any duration provided that he is satisfied with the application which, in his opinion, to be of absolute necessity and adequate noise insulation has been provided to the educational institutions to be affected, or of emergency nature, and not in contravention with the Noise Control Ordinance in any respect.

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENT

(a) Trigger, Action and Target Levels

The basic method of recording any changes in the environmental conditions is through monitoring of air quality and noise level. It has become a common practice to apply a range of environmental limits termed Trigger, Action and Target (TAT) levels to provide a framework for the interpretation of monitoring results. These levels are defined as follows :

Trigger -
Trigger levels provide an indication of deteriorating ambient environmental quality.

Action -
Action levels indicate the necessity to adopt appropriate remedial actions to prevent the environmental quality from going beyond the target limits. If levels go above target, appropriate remedial action, including critical review of plant and work methods would be required.

Target -
Target levels are stipulated in relevant pollution control ordinances, or HKPSG, or established by EPD for a particular project. These are the maximum levels at which the works should proceed.

TAT levels should be established after the completion of baseline monitoring to provide effective environmental management of the project.

Trigger, action and target levels must be realistic and related to existing conditions as well as statutory guidelines. Levels should not be set too low. If levels are set too low a continuous series of exceedances will diminish the effectiveness of monitoring. In case where exceedances of guidelines and statutory standards already exist, levels must take account of this. Alternatively, if levels are set too high, they will not be useful in indicating deteriorating conditions which could be controlled by mitigation measures.

3. NOISE POLLUTION CONTROL

General Specification

(a) The Contractor shall, when necessary, apply as soon as possible for a construction noise permit in accordance with the Noise Control (general) Regulations, display the permit as required and copy to the Resident Engineer.

(b) Before the commencement of any work, the Contractor shall submit to the Resident Engineer for approval the method of working, equipment and sound-reducing measures intended to be used on the site.

(c) The contractor shall take all necessary measures to ensure that the operation of all mechanical equipment and construction processes on or off the site shall not cause any unnecessary and excessive noise which may disturb any occupant of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise. The Contractor shall submit to the Resident Engineer for his approval details of all Constructional Plant concurrent with his monthly report including methods of use and construction operations together with proposed measures for limiting noise therefrom that shall include, but not be limited to the relocation of noise - emitting plant, the use of silencers, mufflers, acoustic sheds or shields, or acoustic sheds or screens and shall be based upon the best reasonable practice. Information on the types and models of silenced equipment and acoustic treatment for unsilenced equipment shall be included. The Contractor shall use all such measures and shall maintain all plant and silencing equipment in good condition so as to minimise the noise emission during construction works.

(d) The Contractor's attention is drawn to the fact that Regulations under the Noise Control Ordinance are made form time to time. Those currently in force (December 1992) are :

- Noise Control (Hand Held Percussive Breakers) Regulations
- Noise Control (Air Compressors) Regulations
- Noise Control (Hearing Protection) Regulations
- The Factories and Industrial Undertakings (Noise at Work) Regulations

Two subsidiary Technical Memorandum are also available regarding construction noise issues:-

- Technical Memorandum (TM) on Noise from Construction Work Other Than Percussive Piling, TM(i)
- Technical Memorandum on Noise from Percussive Piling, TM(ii)

There is also a new version of the Technical Memorandum on Noise from Construction Work in Designated Areas, TM(iii), which governs the noise generated from the use of Specified Powered Mechanical Equipment other than Percussive Piling and/or the carrying out of Prescribed Construction Work within designated areas. This document shall be referenced to for future construction related noise issues.

(e) The Contractor shall supply documentation to the Resident Engineer to demonstrate that all equipment complies with current equipment noise limits.

(f) The Contractor shall be responsible for obtaining and complying with the requirements of EPD regarding identification of NSR's and conditions attached to CNP. All correspondence with EPD and each issued CNP shall be copied to the Resident Engineer.

(g) The Contractor's attention is drawn to the fact that other construction works in the vicinity of the Site will be taken into account by EPD in assessing applications for CNP.

Non-Statutory Noise Control

(h) In addition to the requirements imposed by the Noise Control Ordinance, to control noise generated from equipment and activities for the purpose of carrying out any construction works other than percussive piling during the time period from 0700 to 1900 hours on any day not being a general holiday (including Sundays), the following requirements shall also be complied with:

i. The noise level measured at 1m from the most affected external facade of the nearby noise sensitive receivers from the construction works alone during any 30 minute period shall not exceed an equivalent sound level (Leq) of 75dB(A).

ii. The noise level measures at 1m from the most affected external facades of the nearby schools from the construction works along during any 30 minutes period shall not exceed an equivalent sound level (Leq) of 70dB(A) [65 dB(A) during school examination periods]. The Contractor shall liaise with the schools and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the Contract.

(i) Should the limits stated in the above sub-clauses (d) i. & ii. be exceeded, the construction shall stop and shall not recommence until appropriate measures acceptable to the Resident Engineer that are necessary for compliance have been implemented.

(j) Any stoppage and reduction in output resulting from compliance with this clause shall not entitle the Contractor to any extension of time for completion or additional costs whatever.

To Provide Sound Level Meter

(k) The Contractor shall provide an approved integrating sound level meter to IEC 651:1979 (Type 1) and 804 : 1985 (Type 1) or its equivalent and the manufacturer's recommended sound level calibrator for the exclusive use of the Resident Engineer at all times. The Contractor shall maintain the equipment in proper working order and provide a substitute when the equipment are out of order or otherwise not available.

(l) The sound level meter including the sound level calibrator shall be certified by the manufacturers every two years to ensure they perform the same levels of accuracies as stated in the manufacturer's specifications. That is to say at the time of measurements, the equipment shall have been verified within the last two years.

(m) Portable equipment should be made available for ad-hoc noise measurements as when compliance is in doubt or as required by the Resident Engineer. The location and frequency shall be decided at the discretion of the Resident Engineer and all cost including equipment shall be borne by the Main Contractor.

Environmental Monitoring and Auditing

(n) The following are general guidelines for Environmental Monitoring and Auditing requirements for the Hung Shiu Kiu Development. The Environmental Monitoring and Auditing manual shall be referred to for details.

Baseline Monitoring

(o) The baseline monitoring should be carried out in all of the monitoring stations identified by the Resident Engineer for at least two consecutive weeks prior to the commissioning of the construction works. A set of background data shall be available for each of the following schedule:-

- 3 times a week during daytime (0700-1900) on different days, any days other than general holidays including Sundays;
- 3 times a week during the evening (1900-2300) of all days;
- during daytime and evening (0700-2300) of general holidays (including all Sundays);

- 3 times a week during all night periods (2300-0700).

Regular Monitoring

(p) The Main Contractor shall ensure that the noise levels from construction activities when measured at 1 meter from site boundary during any 5-minute period shall not exceed an equivalent continuous sound level (Leq) of 75dB(A) at all times.

(q) The Main Contractor shall be responsible for producing a work plan detailing the noise monitoring tasks. The plan should detail the location of monitoring, noise criteria, the personnel, measuring equipment and monitoring schedule. The monitoring schedule should specify that a minimum of 3 measurements shall be taken on each Saturday and Sunday (if working is permitted) between 10:00 - 11:00 hours, 11:00 - 12:00 hours and 14:00 - 15:00 hours. The results of noise monitoring should be summarised in the Main Contractor's monthly report to highlight whether or not the construction activity has complied with the noise criteria. Recommendations should be given by the Main Contractor, where required, for improvements to noise control of construction methods.

4. DUST SUPPRESSION MEASURES

General Specification

(a) The Contractor shall undertake at all time to prevent dust nuisance as a result of his activities. The air pollution control system shall be operated whenever the plant is in operation.

(b) The Contractor shall at his own cost, and to the satisfaction of the Resident Engineer, install effective dust suppression equipment and take such other measures as may be necessary to ensure that at the site boundary and any nearby sensitive receivers the concentration of air-borne dust shall not exceed 0.5 milligrams per cubic meter at standard temperature (25°C) and pressure (1.0 bar) average one hour, and 0.26 milligrams per cubic metre, at standard temperature (25°C) and pressure (1.0 bar) averaged over 24 hours.

(c) In the process of material handling, any material which has the potential to create dust shall be treated with water or sprayed with wetting agent.

(d) If after commencement of the Works the Constructional plant, equipment or methods of working are believed by the Resident Engineer to be causing serious air pollution impacts they shall be inspected and remedial proposals shall be drawn up by the Contractor, consented to by the Resident Engineer and implemented. In developing these remedial measures the contractor will be expected to inspect and review all dust sources that may be contributing to the pollution impacts. Where such remedial measures include the use of additional or alternative Construction Plant or equipment such Constructional Plant or equipment shall not be used on the Works until the Resident Engineer's consent has been given. Where remedial measures include maintenance or modification of Constructional Plant or equipment which has received the consent of the Resident Engineer such Constructional Plant or equipment shall not be used on the Works until such maintenance or modification is completed and the adequacy of the maintenance of modification is demonstrated to the satisfaction of the Resident Engineer.

(e) Where dusty material are being discharged to vehicle from conveying system at a fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhaust should be provided for this enclosures and vented to a fabric filter system.

(f) Any vehicles with an open load carrying area used for moving materials which have the potential to create dust shall have properly fitting site and tail boards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extended at least 300mm over the edges of the sides and tail boards.

(g) Stockpiles of sand and aggregates greater than 20m^3 shall be enclosed on three sides, with wall extending above the pile and 2 metres beyond the front of the pile. In addition, water sprays shall be provided and used to dampen stored materials and when receiving raw material.

(h) The Contractor shall frequently clean and water the site to minimises the fugitive dust emissions.

(i) The Contractor shall restrict all motorised vehicles to a maximum speed of 5 km per hour and confine haulage and delivery vehicles to designated roadways inside the site. Areas of the roadway longer than 100m where movement of motorised vehicles exceed 100 vehicular movements/days or as directed by the Resident Engineer shall be furnished with a hard pavement surfacing.

(j) Areas within the Site where there is a regular movement of vehicles shall have an approved hard surface and be kept clean of loose surface material.

(k) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments pool shall be usable prior to any earthworks excavation activity on site. The Contractor shall also provide a hard-surfaced road between washing facility and the public road.

(l) The Contractor shall not install any furnace, boiler or other plant or equipment or use any fuel that might generate excessive smoke or any other pollutants without the prior consent of the Resident Engineer. Unless specifically instructed by the Resident Engineer, the Contractor shall not light fires on site for the burning of debris or any other matter.

(m) The Contractor's attention is drawn to the Air Pollution Control Ordinance and its current subsidiary legislation, particularly the Air Pollution (Furnaces, Ovens, and Chimneys) (Installation and Alteration) Regulations, Air Pollution Control (Smoke) Regulations and Air Pollution Control (Specified Process) Regulations.

(n) The Contractor shall arrange his blasting techniques so as to minimise dust generation.

(o) The Contractor shall ensure that completed earthworks are sealed and hydroseeded and planted as soon as practicable with regard to growing season.

(p) The Contractor shall minimise the extent of soil exposed at any one time.

To Provide Dust Monitoring Equipment:

(q) The TSP monitor should be a high volume sampler as referenced in the USEPA Standard Method 40, CFR Part 50, Appendix B or its equivalent. Equipment list shall be submitted for approval by the Resident Engineer prior to commencement of monitoring work.

(r) Portable 1-hour Dust Meter should be made available to perform ad-hoc air monitoring when sources of dust are in doubt or as required by the Resident Engineer. The location and frequency shall be decided at the discretion of the Resident Engineer and all cost including equipment shall be borne by the Main Contractor.

Baseline Monitoring

(s) The baseline monitoring should be carried out in all of the monitoring stations identified by the Resident Engineer for at least two consecutive weeks prior to the commissioning of the construction work according to the following frequency:-

- daily for 24-hour sampling, and
- at least 3 times per day for 1-hour sampling which should be taken while the highest dust impact is expected.

(t) There should not be any construction or dust generation activities in the vicinity of the stations during baseline monitoring.

(u) In case no monitoring data or questionable results are submitted, the Resident Engineer under reasonable consideration has the right to assign a new set of data to be used as baseline reference.

Regular Monitoring

(v) In regular impact monitoring, the sampling frequency of at least once for every six-day should be strictly observed in all of the monitoring stations for 24-hour monitoring. For the 1-hour monitoring, 3 times for every 6-day at the highest dust impact occasion should be observed.

(w) Specific time to start and stop the 24-hour TSP monitoring should be clearly defined for each location by the Environmental and Auditing Consultant and strictly followed by the operator.

Non-compliance Impact Monitoring

(x) In case of non-compliance with the air quality criteria, more frequent monitoring exercise should be conducted within 24 hours. This additional monitoring should be continued until the excessive dust emission of the deterioration in air quality problem is rectified.

If on-site cement batching facilities exist, the following clauses shall be deemed applicable:-

(y) Conveyor belts shall be fitted with windboards, and conveyor transfer points and hopper discharge areas shall be enclosed to minimise emission of dust. All conveyors carrying materials which have the potential to create dust shall be totally enclosed and fitted with belt cleaners.

(z) Cement or pulverised ash delivered in bulk shall be stored in closed silos fitted with high level alarm indicator. The high level alarm indicators shall be interlocked with filling line such that in the event of the hopper approaching an overfull condition, an audible alarm will operate, and after 1 minute the pneumatic line to the filling tanker will close.

(aa) All air vents on cement silos shall be fitted with fabric filters provided with either shaking or pulse-air cleaning mechanisms. The fabric filter area shall be determined using the air to cloth ratio (0.01 - 0.03 m/s) or the filtering velocity.

(bb) The Contractor shall frequently clean and water the concrete batching plant and crushing plant site and ancillary areas to minimise any dust emissions.

(cc) Weigh hoppers shall be vented to suitable filter.

(dd) The filter bags in the cement silo dust collector must be thoroughly shaken after cement is blown into the silo to ensure adequate dust collection for subsequent loading.

(ee) For dry mix batching, the process should be done in total enclosure with exhaust to fabric filter.

(ff) All cement and concrete trucks are to be effectively washed down after loading and prior to leaving the works.

(gg) The Contractor shall provide and operate two high volume air samplers and associated equipment and shelters in accordance with the USA standard Title 40, Code of Federal Regulations, Chapter 1 (Part 50) Appendix B. Sampling shall be carried out 3 times in every 6 days at 10 No. sampling points on the site boundary for such periods and in a manner as instructed by the Resident Engineer. The samplers, equipment and shelters shall be constructed so as to be transferable between sampling points to enable monitoring of "dust in air" levels at any sampling points. Testing and analysis of sampled materials shall be carried out by a laboratory approved by the Resident Engineer.

5. REMOVAL OF WASTE MATERIAL

(a) The Contractor shall not permit any sewage, waste water of effluent containing sand, cement, silt or any suspended or dissolved material to flow from the site onto any adjoining land or allow any waste matter or refuse to be deposited anywhere within the site or onto any adjoining land and shall have all such matter removed from the site.

(b) The Contractor shall be liable for any damages caused to adjoining land through his failure to comply with clause 6(a).

(c) The Contractor shall be responsible for temporary training, diverting or conducting or open streams or drains intercepted by any works and for reinstating these to their original courses on completion of the Works.

(d) The Contractor shall be responsible for adequately maintaining any existing site drainage system at all times including removal of solids in sand traps, manholes and stream beds.

(e) Any proposed stream course and nullah temporary diversions shall be submitted to the Resident Engineer for agreement one month prior to such diversion works being commenced. Diversions shall be constructed to allow the water flow to discharge without overflow, erosion or washout. The are through which the temporary diversion runs is to be reinstated to its original condition or as agreed by the Resident Engineer after the permanent drainage system has been completed.

(f) The Contractor shall furnish, for the Resident Engineer's information, particulars of the Contractor's arrangements for ensuring that material from any earthworks does not wash into the drainage system. If at any such arrangements prove to be ineffective the Contractor shall take such additional measures as the Resident Engineer shall deem necessary and shall remove all silt which may have accumulated in the drainage system whether within the Site or not.

(g) The Contractor shall segregate all inert construction waste material suitable for reclamation or land formation and shall dispose of such material at such public dumping area(s) as may be specified from time to time by the Director of Civil Engineering Services.

(h) All non-inert construction waste material deemed unsuitable for reclamation or land formation and all other waste material shall be disposed of at a public landfill.

(i) The Contractor's attention is drawn to the Waste Disposal Ordinance, the Public Health and Municipal Services Ordinance and the Water Pollution Control Ordinance.

(j) Any dredged material shall be disposed of at an approved marine dumping ground.

6. DISCHARGE INTO SEWERS AND DRAINS

(a) The Contractor shall not discharge directly or indirectly (by runoff) or cause or permit or suffer to be discharged into any public sewer, storm-water drain, channel, stream-course or sea, any effluent or foul or contaminated water of cooling or hot water without the prior consent of the Resident Engineer who may require the Contractor to provide, operate and maintain at the Contractor's own expense, within the premises of otherwise, suitable works for the treatment and disposal of such effluent or foul or contaminated or cooling or hot water. The design of such treatment works shall be submitted to the Resident Engineer for approval not less than one month prior to the commencement of construction or as agreed by the Resident Engineer.

(b) If any office, site canteen or toilet facilities is erected, foul water effluent shall be directed to a foul sewer or to a sewage treatment facility either directly or indirectly by means of pumping or other means approved by the Resident Engineer.

(c) The Contractor's attention is drawn to the Buildings Ordinance and to the Water Pollution Control Ordinance.

Appendix 10

Cost Estimation for Proposed Noise Barriers and Noise Insulation

COST ESTIMATION FOR PROPOSED NOISE BARRIERS

Noise Barrier Label	Barrier Height	Length	Estimated Approximate Cost (HK$)*
D2EB-1	2m	120m	1,200,000
D2EB-2	2m	163m	1,630,000
D2WB-1	5m	70m	1,330,000
D2WB-2	5m	154m	2,926,000
L1EB-1	3m	106m	1,378,000
L2EB-2	3m	63m	819,000
Cost for noise barriers			9,283,000
Total Cost (+ 15% for Preliminary & General Items)			**10,675,450**

* Cost estimated based on an unit cost of HK$10,000/ metre for 2m high noise barrier, 13,000/ metre for 3m high noise barrier, and 19,000/ metre for 5m high noise barrier.

TITLE: SITE LAYOUT PLAN FOR THE
TRAFFIC NOISE IMPACT ASSESSMENT

PROJECT: TERRITORY DEVELOPMENT DEPARTMENT (CE34/ EIA STUDY FOR HUNG SHUI KIU		
FIGURE: 5-2	SCALE: 1: 1000	EHS CONSULTANTS