

**DRAINAGE SERVICES DEPARTMENT (DSD)
CONTRACT NO. DC/2005/02**

**CONSTRUCTION OF SEWERS, RISING MAINS
& SEWAGE PUMPING STATION AT KAM TIN, NAM SANG
WAI AND AU TAU IN YUEN LONG**






**8th Monthly Construction Phase EM&A Report for
November 2006
(Designated Elements)**

PREPARED FOR

Leader Civil Engineering Corporation Ltd

Quality Index

Date	Reference No.
06 December 2006	TCS/00310/06/600/R0181

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Executive Summary

- ES.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project requires an Environmental Monitoring and Audit (EM&A) program to be implemented by an Environmental Team (ET) throughout the contract period in compliance with the requirements as stated in the project Environmental Permit (EP-220/2005) and the project's Updated EM&A (Designated Elements) Manual.
- ES.02 This is the 8th Monthly Construction Phase EM&A Report (November 2006, Report No. 8) reporting the environmental impact monitoring and audit (EM&A) conducted from 26 October to 30 November 2006. The EM&A in November 2006 covered air quality, noise and waste management.
- ES.03 As inform by the Contractor, works activities at the Kam Tin Pumping Station was commenced on 17 November 2006. Impact monitoring of AM6 (air quality) and NM6 (construction noise) were commenced on 17 and 18 November 2006.
- ES.04 Baseline monitoring of AM5 and NM7 were completed in this reporting period. The baseline monitoring report of AM5 and NM7 had been certified by ETL and verified by IEC and submitted to EPD on 27 November 2006.

Breach of Action and Limit (AL) Levels

- ES.05 Two Action level exceedances of air quality were recorded at AM1 and AM7 on 11 November 2006. ET had liaison with the Contractor to undertaken the investigation. Works activities at the vicinity area were suspended. Dust prevent measures with water spraying was applied on-site. Hill fire at the Yuen Long Tong Tau Po Tsuen and relevant high API at the Yuen Long was recorded on 11 November 2006. No further exceedance was recorded on 17 November 2006. The exceedance on 11 November 2006 was not project related.

Complaint Log

- ES.06 No environmental complaint was received in this reporting period.

Notification of Any Summons and Successful Prosecution

- ES.07 There was no environmental summon or prosecution in this reporting period.

Reporting Changes

- ES.08 There are no changes to be reported in this reporting period.

Future Key Issues

- ES.09 Construction activities to be undertaken in December 2006 include site hoarding erection, site clearance, formation and sheet piling work at Kam Tin pumping station, pipe jacking at the Nam Sang Wai pumping station, sheet piling, excavation and shoring installation, pipe jacking for drainage work at S5 and S6, excavation and shoring installation for receiving pit at S4. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

1.0 BASIC PROJECT INFORMATION

1.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project is part of the Yuen Long and Kam Tin Sewerage and Sewage Disposal (YLKTSSD) Scheme. A site layout map showing the site boundary and the work areas is shown in **Annex A**.

1.02 This 8th Monthly Construction Phase EM&A Report (November 2006, Report No. 8) summarizes the impact monitoring results and audit findings in the reporting period from 26 October to 30 November 2006.

Project Organization

1.03 The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in **Annex B**.

Construction Program of the Reporting Period

1.04 A construction program showing the construction work undertaken in this reporting period was shown in **Annex C**. Environmental mitigation measures implemented are shown in **Table 2-1**.

Management Structure

1.05 The management structure of the Project is shown in **Annex B**.

Works Undertaken in the Reporting Period

1.06 The construction works undertaken during the reporting period under the Environmental Permit (EP-220/2005) were shown as follows:

Kam Tin Pumping Station (P1)

- Erection of site hoarding
- Site investigation works
- Sheet piling

Nam Sang Wai Pumping Station (P3)

- Pipe jacking

Nam Sang Wai Road (S4)

- Excavation and shoring installation

Pok Wai South Road (S5 and S6)

- Pipe jacking
- Sheet piling
- Excavation and shoring installation

2.0 ENVIRONMENTAL STATUS

Work Undertaken in the Reporting Period with Illustrations

2.01 A summary of the work undertaken in this reporting period with illustrations and environmental mitigation measures implemented is shown in **Table 2-1**.

Table 2-1 Work Undertaken in the Reporting Period with Illustrations of Mitigation Measures

Location	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
P1 (Kam Tin Pumping Station)	<ul style="list-style-type: none"> • Erection of site hoarding • Site investigation works • Sheet piling 	<ul style="list-style-type: none"> • Erect 2.4m high noise barrier hoarding around the works area at P1, P2 and P3 • Remove dust and spray water at the construction access • Cover the stockpiles of dusty material properly • Spray water to all dusty materials immediately before loading and unloading 	A1 & F6 A2 A3 A4
P3 (Nam Sang Wai Pumping Station)	<ul style="list-style-type: none"> • Pipe jacking 	<ul style="list-style-type: none"> • Wash the wheels of vehicles before leaving the site • Install and use power-operated cover at the dump trucks • Spray water at the pavement breaking locations • Spray the working area of excavation frequently 	A5 A6 A7 A8
S4 (Nam Sang Wai Road)	<ul style="list-style-type: none"> • Excavation and shoring installation 	<ul style="list-style-type: none"> • Maximize the use of quiet PME on site • Apply and obtain appropriate waste disposal licenses • Handle, store and dispose of chemical wastes as per relevant regulations • Implement trip-ticket system for waste disposal 	B1, B2 & F5 D1 D2, D3 & D4 D5
S5 & S6 (Pok Wai South Road)	<ul style="list-style-type: none"> • Sheet piling • Excavation and shoring installation • Pipe jacking 	<ul style="list-style-type: none"> • Restrict open fires and provide fire fighting equipment in the works area • Perform weekly inspection with ET and monthly audit with IEC • Conduct noise and dust monitoring as per EM&A manual during construction • Provide sedimentation tanks for treating site discharge. • Recycle wheel washing water and provide sedimentation tanks for treating site discharge. 	F9 H1 I1 & I2 - -

2.02 Photographic records showing the implemented 2.4m high noise barrier at the pumping station (S3) are shown in **Annex D**.

Project Drawings

2.03 Drawings showing the work areas under EP-220/2005 and the locations of the designated monitoring stations are presented in **Annex E**.

- 2.04 There are four designated air quality and four noise monitoring stations under the project EP. In this reporting period, the monitoring was carried out at three designated air (AM1, AM6 & AM7) and three noise (NM3, NM4 & NM6) monitoring stations.

Station ID	Nature of Premise	Site Work Description	Station Coordinates
AM1	Site Boundary in NSW	Sheet piling and trench excavation.	835829 N 822910 E
AM6	Site Boundary in KT		833308 N 823987 E
AM7	Site Boundary in NSW		836171 N 822586 E
NM3	Village House in NSW		835808 N 822817 E
NM4	Village House in NSW		835282 N 822811 E
NM6	Village House in KT		833288 N
			823999 E

- 2.05 The impact monitoring of AM6 (air quality) and NM6 (construction noise) was commenced on 17 and 18 November 2006. The baseline monitoring report of AM6 and NM6 had been certified by ETL and verified by IEC and submitted to EPD at early of November 2006.
- 2.06 The baseline monitoring report of AM5 (air quality) and NM7 (construction noise) had been certified by ETL and verified by IEC and submitted to EPD on 27 November 2006. Impact monitoring of AM5 and NM7 will commenced at the early of December 2006.

3.0 SUMMARY OF EM&A REQUIREMENTS

Monitoring Parameters

- 3.01 Environmental monitoring and audit requirements are set out in the Updated EM&A manual. Air quality and construction noise have been identified to be the key monitoring parameters during the impact phase for the construction of the project.
- 3.02 A summary of the impact EM&A requirements for air quality and construction noise as per the project Updated EM&A Manual are shown in **Table 3-1**.

Table 3-1 Summary of EM&A Requirements

Environmental Aspect	Monitoring Parameters
Air Quality	24-Hr TSP
Construction Noise	Leq 30min during day time 07:00 to 19:00 Supplementary L10 and L90 for reference.

Environmental Quality Performance Limits

- 3.03 A summary of the Action/Limit (A/L) Levels for air quality and construction noise is shown in **Tables 3-2** and **3-3**.

Table 3-2 Action and Limit Levels for Air Quality Monitoring

Monitoring Location	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
AM1	391	184	500	260
AM6	329	183	500	260
AM7	383	204	500	260

Table 3-3 Action and Limit Levels for Construction Noise

Parameter	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hrs on normal weekdays	When one or more documented complaints are received	> 75 dB(A)

Event and Action Plans

- 3.04 An Event Action Plan for air quality and construction noise has been implemented for this project. Details of the Event Action Plan are presented in **Annex F**.

Environmental Mitigation Measures

- 3.05 The project EIA report has recommended environmental mitigation measures to minimize potential environmental impacts arising from the construction of the project. A full list of the mitigation measures is detailed in **Annex G**.

Environmental Requirements in Contract Documents

- 3.06 The environmental requirements in the contract documents generally refer to the compliance of the requirements as stipulated in the project EP and the updated EM&A Manual.

4.0 IMPLEMENTATION STATUS

4.01 The implementation status of environmental protection and pollution control/mitigation measures as recommended in the project EIA report is summarized in **Table 2-1** and the implementation schedule as shown in **Annex G**.

4.02 A summary status of the permits, licences, and/or notifications on environmental protection for this Project in this reporting period is presented in **Table 4-1**.

Table 4-1 Status of Environmental Licenses and Permits

Item	Item Description	Permit Status
1	Environmental Permit No.: EP-220/2005	Issued in June 2005
2	Air Pollution Control (Construction Dust)	Notified EPD on 24 Dec 2005
3	Chemical Waste Producer Registration (No. 5213-528-L2544-08)	Registration on 27 Jan 2006
4	Water Pollution Control (Discharge License No. 1U434/1)	Issued on 08 May 2006
5	Account for Disposal of Construction Waste No. 5004959	Registration on 27 Dec 2005
6	Construction Noise Permit (CNP No. PP-RN0017-06)	Valid (2 Jun to 12 Dec 2006)
7	Construction Noise Permit (CNP No. GW-RN0591-06)	Valid (8 Dec 2006 to 07 Apr 2007)

5.0 MONITORING RESULTS

MONITORING METHODOLOGY OF AIR QUALITY MONITORING

- 5.01 The 24-Hr TSP monitoring was carried out by a High volume sampler (HVS) in compliance with the updated EM&A Manual. The HVS employed complied with the PS specifications including.
- Power supply of 220v/50 hz for 24-hour continuous operation;
 - 0.6-1.7 m³/min (20-60 SCFM) adjustable flow rate;
 - A 7-day mechanical timer for 24-hour operation;
 - An elapsed time indicator with ± 2 minutes accuracy for 24-Hr operation;
 - Minimum exposed area of 63 in²;
 - Flow control accuracy of $\pm 2.5\%$ deviation over 24-Hr operation;
 - An anodized aluminum shelter to protect the filter and sampler;
 - A motor speed-voltage control to control mass flow rate with accuracy of $\pm 2.5\%$ deviation over 24-hr sampling period;
 - Provision of a flow recorder for continuous monitoring;
 - Provision of a peaked roof inlet;
 - Incorporation with a manometer; and
 - An 8"x10" stainless steel filter holder to hold, seal and easy to change the filter paper.
- 5.02 The filter papers used in 24-Hr TSP monitoring were of size 8"x10" and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis. In house QA/QC procedures for all monitoring practices to ensure the validity of monitoring data. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.
- 5.03 The meteorological information during the reporting period was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).

MONITORING METHODOLOGY OF CONSTRUCTION NOISE MONITORING

- 5.04 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (Leq) measured in decibels (dB). Supplementary statistical results (L₁₀ and L₉₀) were also obtained for reference.
- 5.05 Hand-held sound level meters (B&K Model 2238) and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification were used for taking the baseline noise measurements.
- 5.06 Windshield was fitted in all measurements. All noise measurements were made with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq).
- 5.07 No noise measurement was made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s.

LABORATORY AND MONITORING EQUIPMENT USED

- 5.08 A local HOKLAS-accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS No. 66), is responsible for the analytical testing of the 24-Hr TSP filter papers.
- 5.09 The monitoring equipment used in the impact EM&A program is presented in **Table 5-1**:

Table 5-1 Monitoring Equipment Used in Impact EM&A Program

Parameters	Monitoring Equipment	
Air Quality	24-Hr TSP	Tisch High Volume Sampler 515N
Noise	Leq30min	B&K Type 2238
	On-site Calibration	B&K Type 4231

EQUIPMENT CALIBRATION

- 5.10 Initial calibration of the HVS was performed upon installation and thereafter at a six month intervals in accordance with the manufacturer’s instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.
- 5.11 The sound level meters were calibrated using an acoustic calibrator prior to and after measurements. The meters are regularly calibrated in accordance with the manufacturer’s instructions. Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB.
- 5.12 The renew calibration certificates of the monitoring equipment used during the impact monitoring program in this month are attached in **Annex H**.

PARAMETERS MONITORED

- 5.13 The environmental parameters monitoring in this reporting period were compliance with the monitoring requirements as in **Table 3-1**.

MONITORING LOCATIONS

- 5.14 There are four designated air quality and four noise monitoring stations under the project EP. For this reporting month, monitoring was carried out at three designated air (AM1, AM6 & AM7) and three noise (NM3, NM4 & NM6) monitoring stations. The baseline monitoring of AM5 (air) and NM7 (noise) at the Sha Po Pumping Station were completed in this reporting month. As inform by the Contractor, construction work at the Sha Po Pumping Station will commenced at the early of next reporting month. Impact monitoring of AM5 and NM7 will commenced at December 2006. The locations of the designated monitoring stations are shown in **Table 5-2** and geographically in **Annex E**.

Table 5-2 Location of Air Quality and Construction Noise Monitoring Stations

Air Quality (4 Stations)	
AM1	Worksite boundary facing scattered house in Nam Sang Wai
AM5*	Worksite boundary facing Fung Kat Heung
AM6**	Worksite boundary facing scattered near Route 3
AM7	Worksite boundary facing scattered house in Nam Sang Wai
Construction Noise (4 Stations)	
NM3	Village House in Nam Sang Wai
NM4	Village House in Nam Sang Wai
NM6**	Scattered House near Route 3
NM7*	Fung Kat Heung

Remarks: *Impact monitoring of AM5 & NM7 will commenced at the early of December 2006.

** Impact monitoring of AM6 & NM6 were commenced on 17 and 18 November 2006 respectively.

MONITORING FREQUENCY AND PERIOD

- 5.15 The impact 24-Hr TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 15 monitoring events were carried out in this reporting period.
- 5.16 The impact noise monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 17 monitoring events were carried out in this reporting period.

MONITORING RESULTS WITH DATE AND TIME

- 5.17 The air quality monitoring data for this reporting period were summarized in **Table 5-3**.

Table 5-3 Summary of Air Quality Monitoring Results

Date	24-Hr TSP (ug/m ³)		
	AM1	AM6 [#]	AM7
31-Oct-06	131	-	110
6-Nov-06	58	-	125
11-Nov-06	231*	-	224*
17-Nov-06	53	166	47
23-Nov-06	54	56	177
29-Nov-06	82	104	117
Average (Range)	102 (53 - 231)	108 (56 - 166)	133 (47 - 224)

All 24-Hr TSP monitoring were preset to start at 00:00 on each monitoring date.

From the Contractor information, no construction work was undertaken at the Kam Tin Pumping Station area before 17 November 2006. Therefore, the impact monitoring of AM6 was commenced on 17 November 2006

* Action Level exceedances were recorded.

- 5.18 Two Action level exceedances were recorded at AM1 and AM7 on 11 November 2006. ET had liaison with the Contractor to undertaken the investigation. Works activities at the vicinity area were suspended. Dust prevent measures with water spraying was applied on-site. Hill fire at the Yuen Long Tong Tau Po Tsuen and relevant high API at the Yuen Long was recorded on 11 November 2006. No further exceedance was recorded on 17 November 2006. The exceedance on 11 November 2006 was not project related.

5.19 The impact noise monitoring results are summarized in **Tables 5-4 to 5-6**.

Table 5-4 Summary of Noise Monitoring Results at NM3

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
26-Oct-06	11:06	43.2	42.7	43.7	46.8	50.7	42.4	46.1	49.1
01-Nov-06	11:02	46.8	47.5	49.6	48.7	47.6	50.5	48.6	51.6
07-Nov-06	11:08	45.0	50.9	46.4	44.2	44.5	44.7	46.7	49.7
13-Nov-06	13:49	48.3	47.6	49.2	49.3	49.8	48.2	48.8	51.8
18-Nov-06	10:18	51.5	52.1	54.1	53.4	49.2	48.3	51.9	54.9
24-Nov-06	10:31	61.2	62.7	60.4	63.4	61.9	62.5	62.1	65.1
30-Nov-06	10:39	55.4	60.4	57.7	55.8	56.4	55.0	57.2	60.2
Limit Level									75

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-5 Summary of Noise Monitoring Results at NM4

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
26-Oct-06	9:42	49.9	51	48.4	47.5	49.3	48.1	49.2	52.2
1-Nov-06	10:14	57.6	57.1	60.8	56.3	58.2	55.7	58.0	61.0
7-Nov-06	9:06	56.1	55.5	55.9	56.9	54.7	56.0	55.9	58.9
13-Nov-06	11:03	52.7	52.9	55.2	54.1	53.2	53.3	53.7	56.7
18-Nov-06	8:58	50.8	57.4	58.0	53.1	54.8	55.0	55.5	58.5
24-Nov-06	8:56	59.8	56.1	56.9	57.1	56.3	58.2	57.6	60.6
30-Nov-06	8:54	54.8	56.0	53.3	53.2	53.4	53.9	54.2	57.2
Limit Level									75

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-6 Summary of Noise Monitoring Results at NM6

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
18-Nov-06 [#]	13:09	71.0	71.7	71.2	74.3	75.3	63.3	72.4	No
24-Nov-06	13:02	70.9	73.5	73.3	70.4	74.2	73.8	72.9	Correction
30-Nov-06	14:31	66.8	69.7	68.1	72.3	71.2	70.9	70.2	Required
Limit Level									75

* Noise monitoring was undertaken at the façade, correction was not necessary.

From the Contractor information, no construction work was undertaken at the Kam Tin Pumping Station area before 17 November 2006. Therefore, the impact monitoring of NM6 was commenced on 18 November 2006.

WEATHER CONDITIONS DURING THE MONITORING PERIOD

5.20 The meteorological data on the monitoring dates are summarized in **Annex I**.

GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

5.21 The graphical plots of air quality and construction noise monitoring data are presented in **Annex J**.

MAJOR ACTIVITY CARRIED OUT DURING THE MONITORING PERIOD

5.22 There were construction activities of sheet piling and trench excavation undertaken during the monitoring period.

WEATHER CONDITIONS THAT AUGUST AFFECT THE MONITORING RESULTS

- 5.23 The weather conditions at the time of monitoring were considered acceptable for monitoring activities and did not have significant impact on the monitoring results obtained.

OTHER FACTORS INFLUENCING THE MONITORING RESULTS

- 5.24 Hill fire at the Yuen Long Tong Tau Po Tsuen was noted on 11 November 2006. Two Action Level exceedances of air quality were recorded at AM1 & AM7 on 11 November 2006. ET had liaison with the Contractor to undertake the investigation. No further exceedance was recorded at other monitoring days in this reporting period. The exceedance on 11 November 2006 was not due to the project.

QA/QC RESULTS AND DETECTION LIMITS

- 5.25 Not applicable.

6.0 REPORT ON NON-COMPLIANCE (NC), COMPLAINTS, NOTIFICATIONS OF SUMMONS (NoS) AND SUCCESSFUL PROSECUTIONS

RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS

- 6.01 Two Action Level exceedances of air quality were recorded at AM1 & AM7 on 11 November 2006. After investigation, the exceedance on 11 November 2006 was not project related. No further Action or Limit Level exceedance was recorded in this reporting period.

RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED

- 6.02 There was no environmental complaint received in this reporting period.

RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION

- 6.03 There was no notification of summon or prosecution received in this reporting period.

REVIEW OF REASONS FOR AND IMPLICATIONS OF NC, COMPLAINTS AND NOS

- 6.04 No NC, complaints or NoS received in this reporting period.

DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN

- 6.05 No NC, complaints or NoS received in this reporting period.

7.0 OTHERS

FUTURE KEY ISSUES

- 7.01 Construction activities to be undertaken in December 2006 include site hoarding erection, site clearance, formation and sheet piling work at Kam Tin pumping station, pipe jacking at the Nam Sang Wai pumping station, sheet piling, excavation and shoring installation, pipe jacking for drainage work at S5 and S6, excavation and shoring installation for receiving pit at S4. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

SOLID AND LIQUID WASTE MANAGEMENT STATUS

- 7.02 The quantities of waste for disposal or reuse in this reporting period are summarized in **Tables 7-1** and **7-2**.

Table 7-1 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (tons) – Disposed	2,520	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (tons) – Reused	780	DSD Contract DC/2005/0
C&D Materials (Non-Inert) (tons)	-	NA
Chemical Waste (Litres)	-	NA
General Refuse (tons)	39	Refuse Collector

Table 7-2 Summary of Quantities of Waste for Reuse/Recycling

Type of Waste	Quantity	Disposal Location
Metals for Recycling (kg)	1,350	NA
Paper for Recycling (kg)	0	NA
Plastics for Recycling (kg)	0	NA

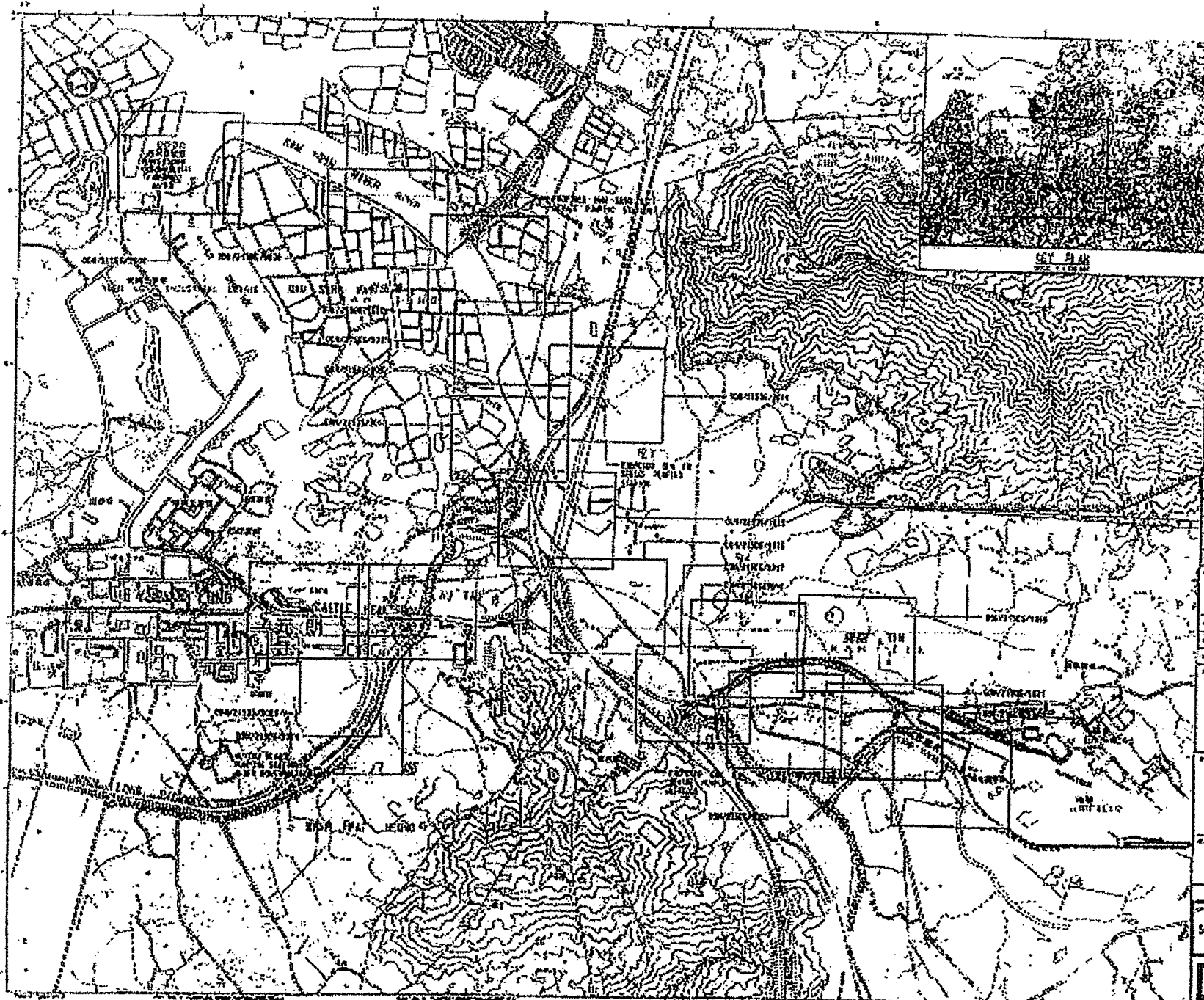
7.03 There was no site effluent discharged but an estimated volume of less than 50m³ of surface runoff was discharged in the reporting period.

SUBMISSION OF PROFORMA

7.04 Representatives of the Engineer, the Contractor and ET carried out regular weekly joint site inspection on 31 October, 07, 11, 23 and 29 November 2006 to evaluate the site environmental performance. No non-compliance was noted and six observations were recorded in weekly site inspection. In this reporting period, no IEC monthly joint site inspection with RE, Contractor and ET was carried out.

7.05 Proforma of the weekly ET site inspection activities are presented in **Annex K**.

Annex A
Project Site Layout



SHEET 1
 1. PROJECT NO. 100-100-100
 2. SHEET NO. 1 OF 10
 3. DATE

REVISIONS

FOR TENDER PURPOSES ONLY

NO.	DESCRIPTION	DATE
1	ISSUED FOR TENDER	1/1/1900
2	REVISED	1/1/1900
3	REVISED	1/1/1900
4	REVISED	1/1/1900

John H. ...

DESIGNED BY ...

DRAWN BY ...

CHECKED BY ...

APPROVED BY ...

DATE OF WORK

CONTRACT NO. 100-100-100

ENGINEER

SEWERAGE PROJECTS DIVISION

B PUBLIC WORKS DEPARTMENT
 NEW YORK CITY
 SPECIAL INVESTIGATION SECTION

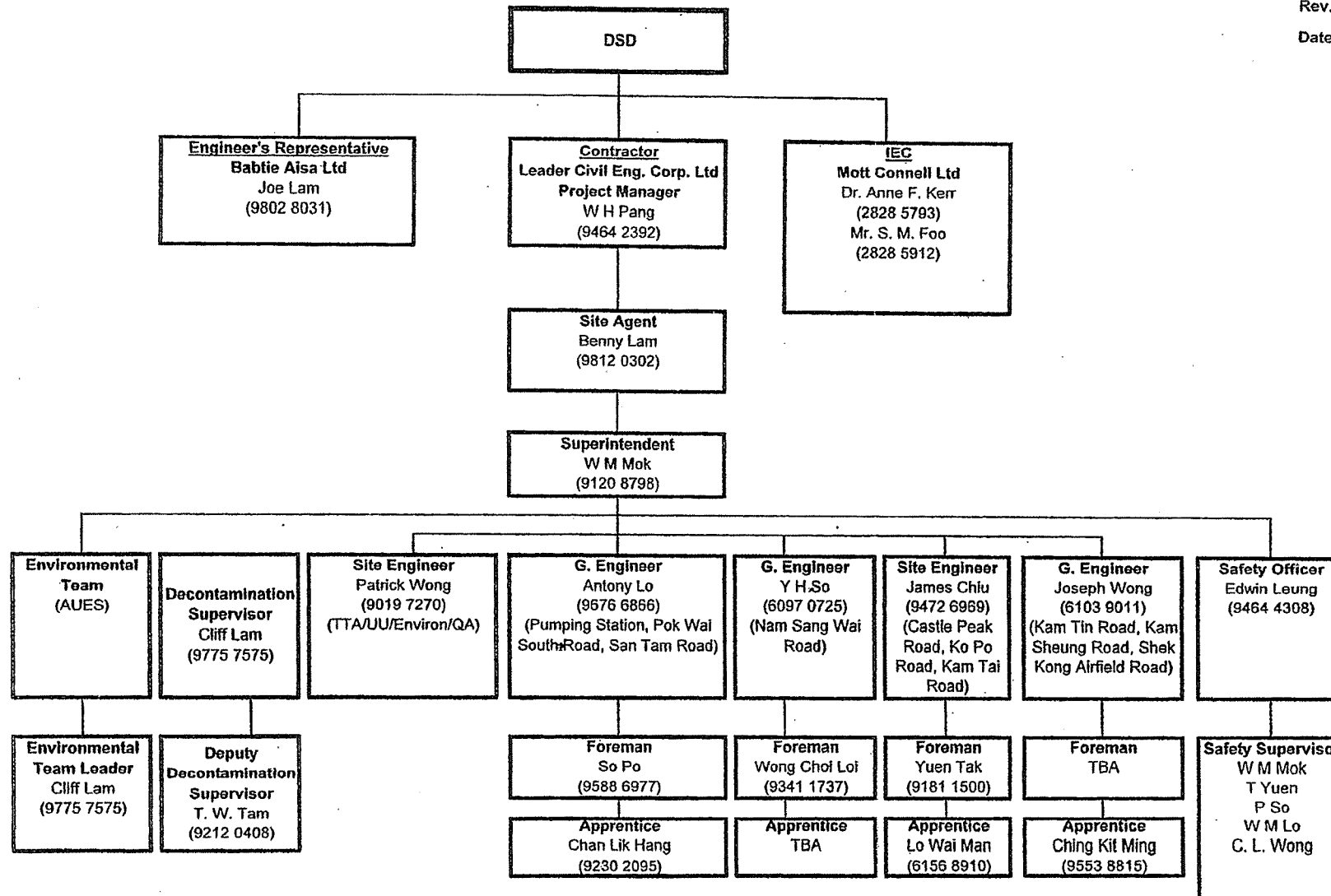
Annex B

Project Organization and Management Structure

DSD Contract No. DC/2005/02
**Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin,
 Nam Sang Wai and Au Tau in Yuen Long**
Project Environmental Organization Chart

Rev. : 01

Date : 12-May-06




Annex C
Construction Program

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Gantt Chart (Timeline from 2006 to 2007)												
Submission																					
Design Submission																					
SUN1400	Design/Submit Temp Work - Kam Tin P/Station	30		100	20MAY06 A	09NOV06 A	20MAY06 A	09NOV06 A	Design/Submit Temp Work - Kam Tin P/Station												
SUN1500	Approve Temp Work - Kam Tin P/Station	6	15d	50	10NOV06 A	30NOV06	10NOV06 A	18DEC06	Approve Temp Work - Kam Tin P/Station												
SUN1600	Design/Submit Temp Work - Sha Po P/Station	30	141d	30	10NOV06 A	21DEC06	10NOV06 A	12JUN07	Design/Submit Temp Work - Sha Po P/Station												
SUN1700	Approve Temp Work - Sha Po P/Station	6	141d	0	22DEC06	29DEC06	13JUN07	20JUN07	Approve Temp Work - Sha Po P/Station												
SUN1900	Approve Temp Work - Nam San Wai P/Station	6	-100d	95	01MAR06 A	27NOV06	01MAR06 A	29JUL06	Approve Temp Work - Nam San Wai P/Station												
Method Statement Submission																					
SUC1000	Prepare/Submit Temp Work - Kam Tin P/Station	30		100	20MAY06 A	09NOV06 A	20MAY06 A	09NOV06 A	Prepare/Submit Temp Work - Kam Tin P/Station												
SUC1100	Approve Temp Work - Kam Tin P/Station	6	15d	50	10NOV06 A	30NOV06	10NOV06 A	18DEC06	Approve Temp Work - Kam Tin P/Station												
SUC1200	Prepare/Submit Temp Work - Sha Po P/Station	30	141d	30	10NOV06 A	21DEC06	10NOV06 A	12JUN07	Prepare/Submit Temp Work - Sha Po P/Station												
SUC1300	Approve Temp Work - Sha Po P/Station	6	141d	0	22DEC06	29DEC06	13JUN07	20JUN07	Approve Temp Work - Sha Po P/Station												
SUC1500	Approve Temp Work - Nam San Wai P/Station	6	-100d	95	01MAR06 A	27NOV06	01MAR06 A	29JUL06	Approve Temp Work - Nam San Wai P/Station												
Preliminaries																					
PR2900	Deliver Ductile Iron Pipe	800	57d	26	29APR06 A	12NOV08	29APR06 A	20JAN09	Deliver Ductile Iron Pipe												
PR3100	Deliver Precast Concrete Pipe	800	72d	28	24APR06 A	25OCT08	24APR06 A	20JAN09	Deliver Precast Concrete Pipe												
PR3300	Deliver Vitrified Clay Pipe	800	43d	25	10APR06 A	28NOV08	10APR06 A	20JAN09	Deliver Vitrified Clay Pipe												
PR3400	Structural Monitoring by ISE	835	34d	27	06APR06 A	09DEC08	06APR06 A	20JAN09	Structural Monitoring by ISE												
PR3500	Environmental monitoring by ET	814	74d	30	06APR06 A	23OCT08	06APR06 A	20JAN09	Environmental monitoring by ET												
Section 1 - Kam Tin Sewage Pumping Station																					
Portion A																					
Preliminaries																					
S1AA1000	Erect Hoarding	18		100	22AUG06 A	14NOV06 A	22AUG06 A	14NOV06 A	Erect Hoarding												
Ground Investigation																					
S1AB1400	Install Settlement Markers	1		100	14NOV06 A	15NOV06 A	14NOV06 A	15NOV06 A	Install Settlement Markers												
Site Clearance																					
S1AC1000	Demolish Existing Building	12		100	17NOV06 A	23NOV06 A	17NOV06 A	23NOV06 A	Demolish Existing Building												
Earthworks																					
S1AG1000	Drive Sheetpile	20	15d	36	16NOV06 A	15DEC06	16NOV06 A	04JAN07	Drive Sheetpile												
S1AG1100	Excavate to Level of 1st Layer of Waling	4	15d	0	16DEC06	20DEC06	05JAN07	09JAN07	Excavate to Level of 1st Layer of Waling												
S1AG1200	Install 1st Layer Waling & Strut	4	15d	0	21DEC06	26DEC06	10JAN07	13JAN07	Install 1st Layer Waling & Strut												
S1AG1300	Excavate to Level of 2nd Layer of Waling	10	15d	0	27DEC06	08JAN07	15JAN07	25JAN07	Excavate to Level of 2nd Layer of Waling												
S1AG1400	Install 2nd Layer Waling & Strut	4	15d	0	09JAN07	12JAN07	26JAN07	30JAN07	Install 2nd Layer Waling & Strut												
S1AG1500	Excavate to Level of 3rd Layer of Waling	13	15d	0	13JAN07	27JAN07	31JAN07	14FEB07	Excavate to Level of 3rd Layer of Waling												
S1AG1600	Install 3rd Layer Waling & Strut	4	15d	0	29JAN07	01FEB07	15FEB07	22FEB07	Install 3rd Layer Waling & Strut												
S1AG1700	Excavate to Level of 4th Layer of Waling	14	15d	0	02FEB07	21FEB07	23FEB07	10MAR07	Excavate to Level of 4th Layer of Waling												
S1AG1800	Install 4th Layer Waling & Strut	4	15d	0	22FEB07	26FEB07	12MAR07	15MAR07	Install 4th Layer Waling & Strut												

Start date 19DEC05
 Finish date 30JUL09
 Data date 28NOV06
 Run date 04DEC06
 Page number 1A
 Primavera Systems, Inc.

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 November 2006

Early bar
 Progress bar
 Critical bar
 Summary bar
 Start milestone point
 Finish milestone point



Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	2006 NOV 13 20 27 04 11 18 25 01 08 15 22 29 OCT 16 23 30 06 2007 JAN 05 12 19 26											
S9L1200	Prepare & Submit Excavation Plan - Portion A/B	18		100	15NOV06 A	27NOV06 A	15NOV06 A	27NOV06 A	Prepare & Submit Excavation Plan - Portion A/B											
S9L1300	Approve Excavation Plan - Portion A/B	12	20d	5	28NOV06 A	09DEC06	28NOV06 A	04JAN07	Approve Excavation Plan - Portion A/B											
S9L1500	Approve of CAR & RAP - Portion F/G/H	12	22d	90	08AUG06 A	28NOV06	08AUG06 A	23DEC06	Approve of CAR & RAP - Portion F/G/H											
S9L1700	Approve Excavation Plan - Portion F/G/H	12	22d	90	08AUG06 A	28NOV06	08AUG06 A	23DEC06	Approve Excavation Plan - Portion F/G/H											
Portion A																				
Ground Investigation																				
S9AB1200	Testing of Soil Samples	12		100	23AUG06 A	14NOV06 A	23AUG06 A	14NOV06 A	Testing of Soil Samples											
Portion B																				
Ground Investigation																				
S9BB1200	Testing of Soil Samples	12		100	24AUG06 A	14NOV06 A	24AUG06 A	14NOV06 A	Testing of Soil Samples											

Start date 19DEC05
 Finish date 30JUL09
 Data date 28NOV06
 Run date 04DEC06
 Page number 6A
 c Primavera Systems, Inc.

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 November 2006

-  Early bar
-  Progress bar
-  Critical bar
-  Summary bar
-  Start milestone point
-  Finish milestone point



Annex D

Photographical Records – Noise Barrier On-Site



Annex E

Locations of Monitoring Stations

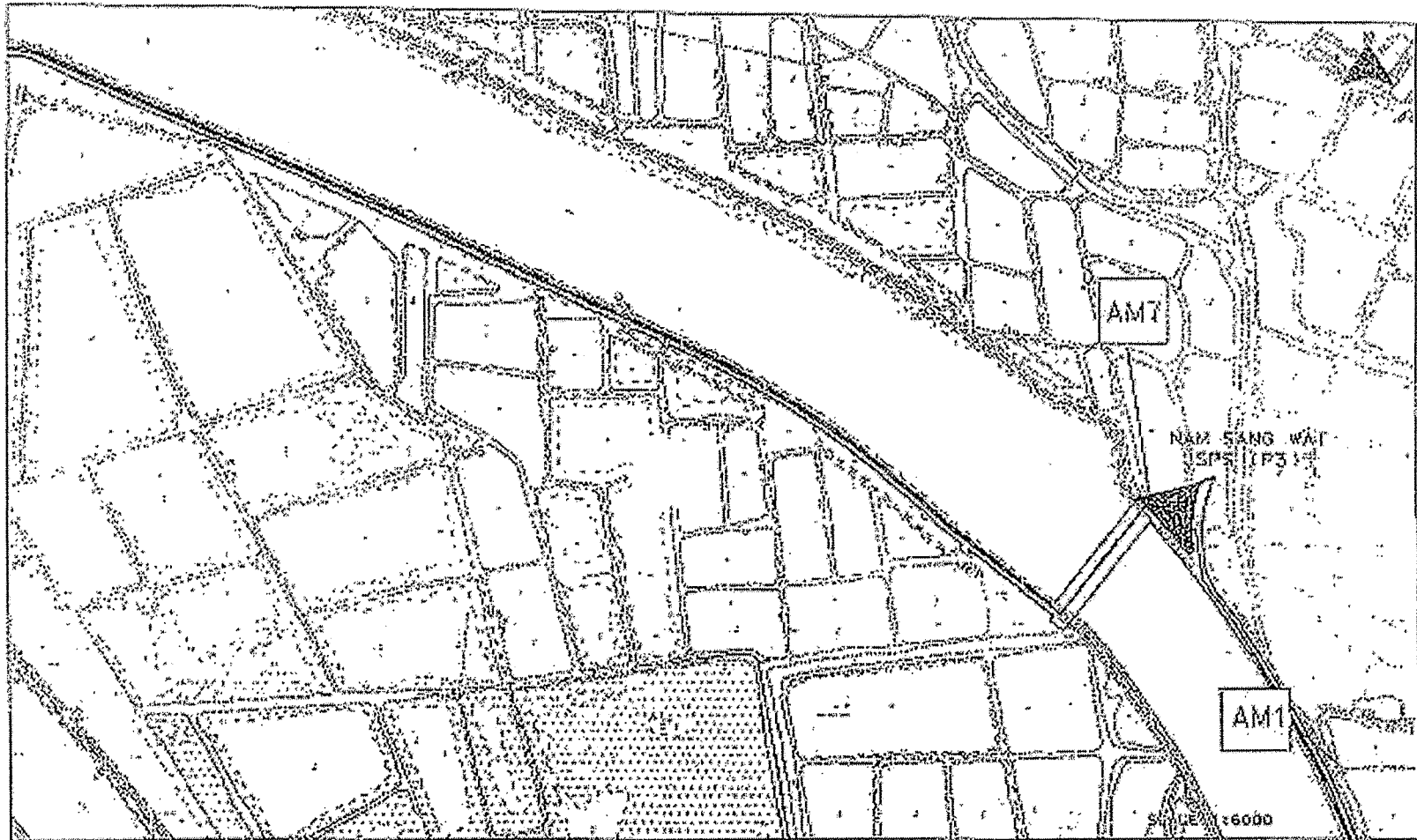


FIGURE C1

LOCATION OF BUSY MONITORING STATIONS (AM1, AM2 & AM3)

UNITED STATES GOVERNMENT
 OFFICE OF RESEARCH AND DEVELOPMENT

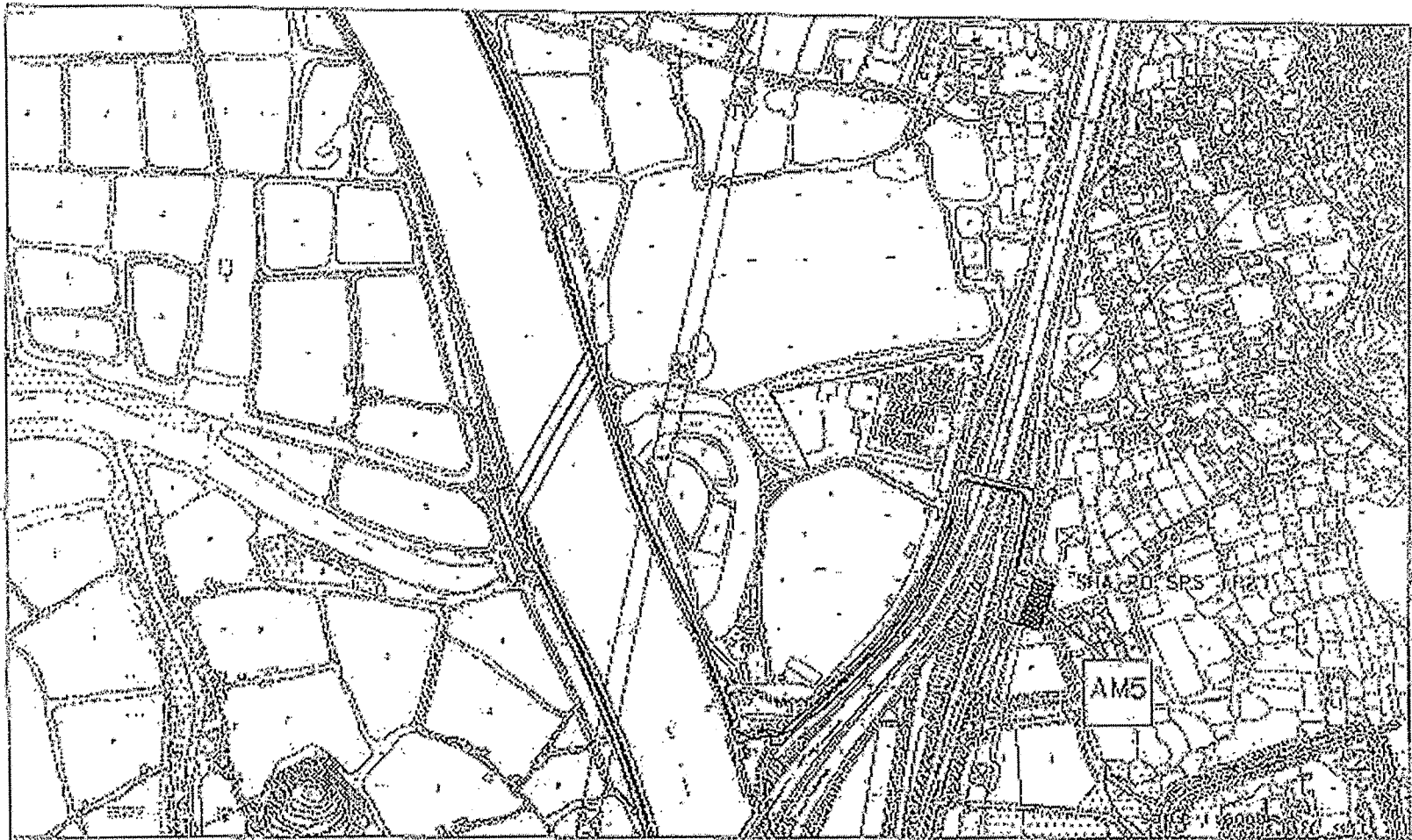


FIGURE C2

LOCATION OF DUST MONITORING STATION AM5:

AM5
SPS 11211

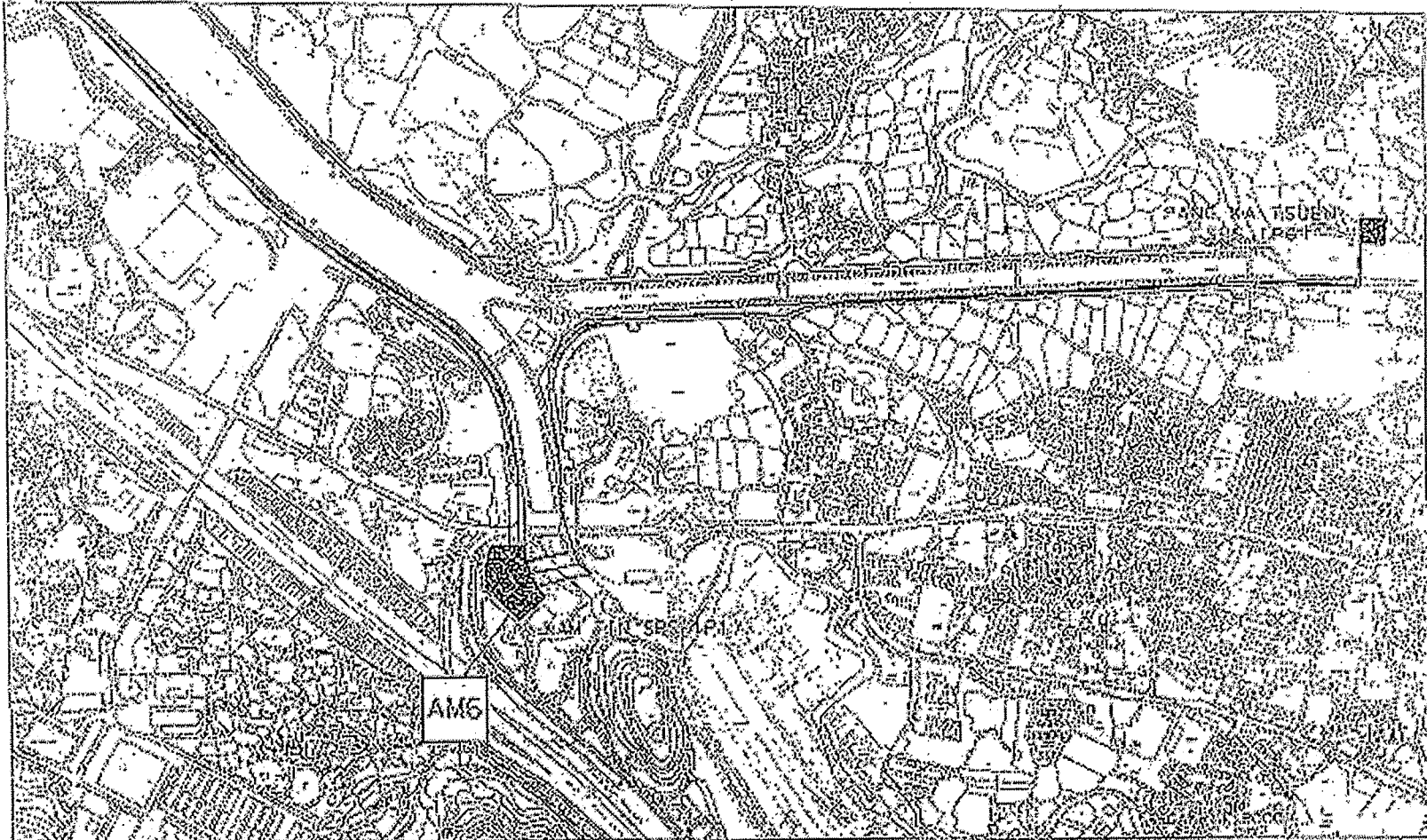


FIGURE 6A

LOCATION OF DUST MONITORING STATIONS (AM6, AM5 & AM10)

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CONTAINS

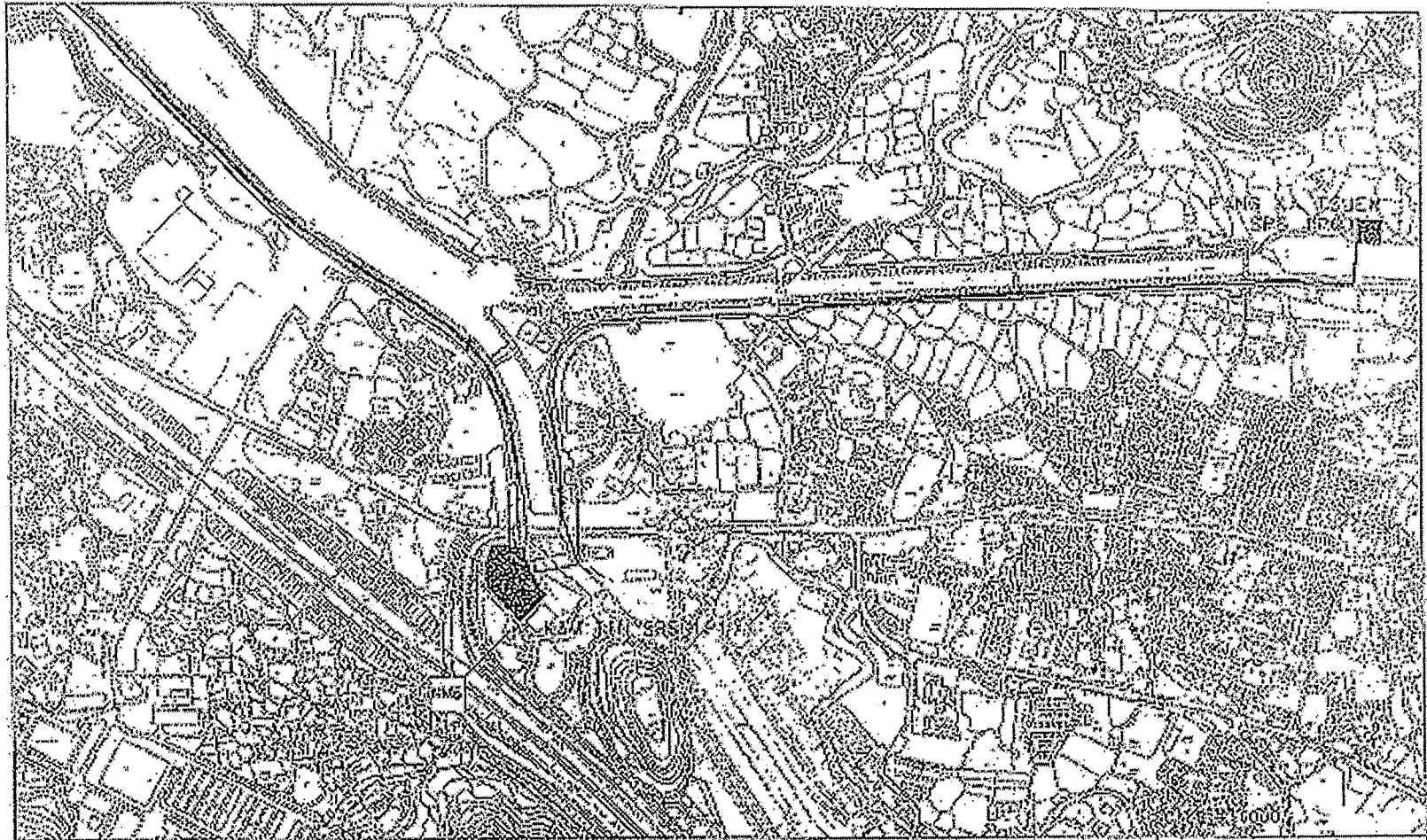


FIGURE 2

LOCATION OF NOISE MONITORING STATIONS (NOI, NMS, SMI, RMO)

SEE PAGE NUMBERING OF
THIS REPORT

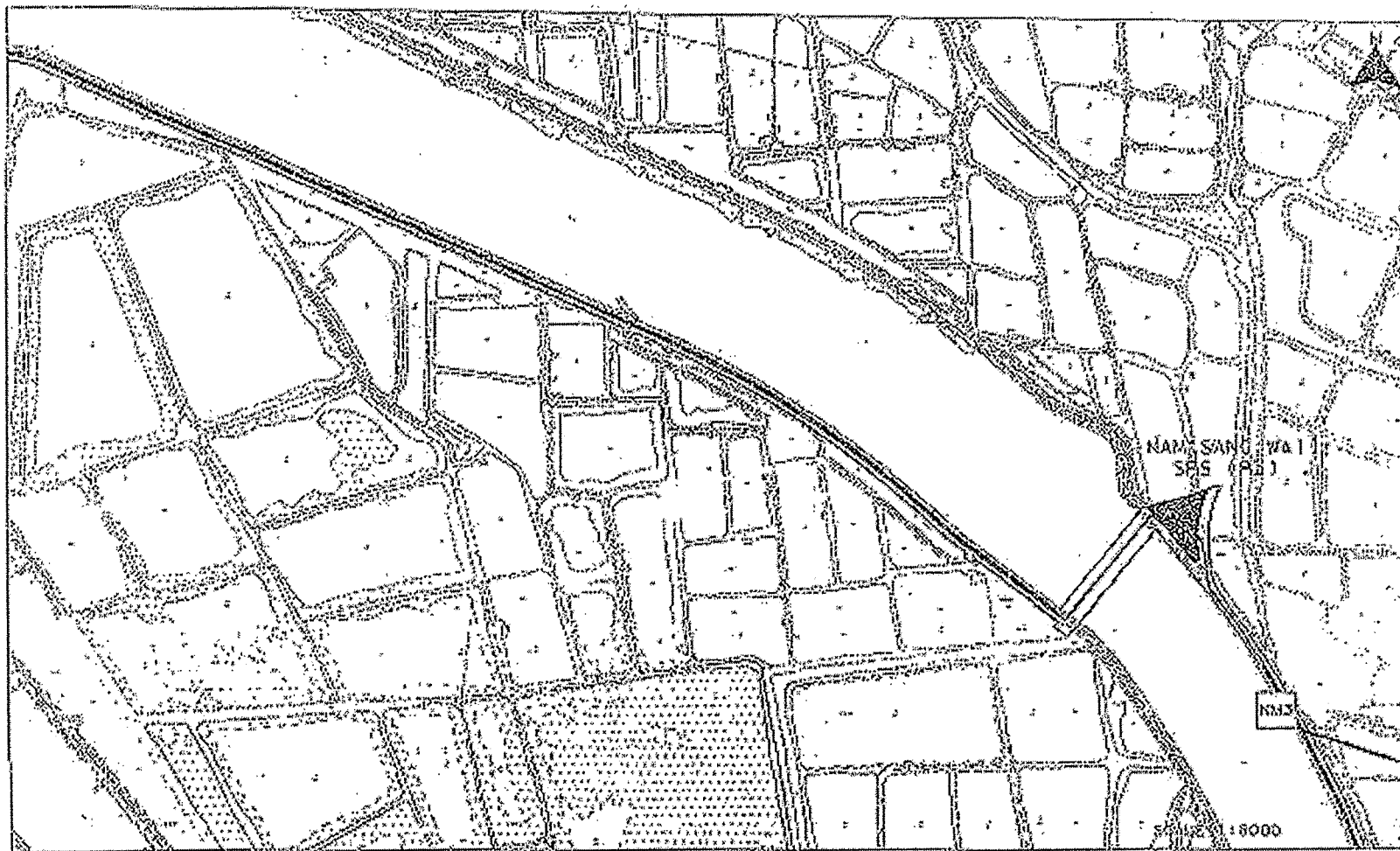


FIGURE C8

LOCATION OF NOISE MONITORING STATIONS (NMS). RWS 1

UNCLASSIFIED//FOR OFFICIAL USE ONLY

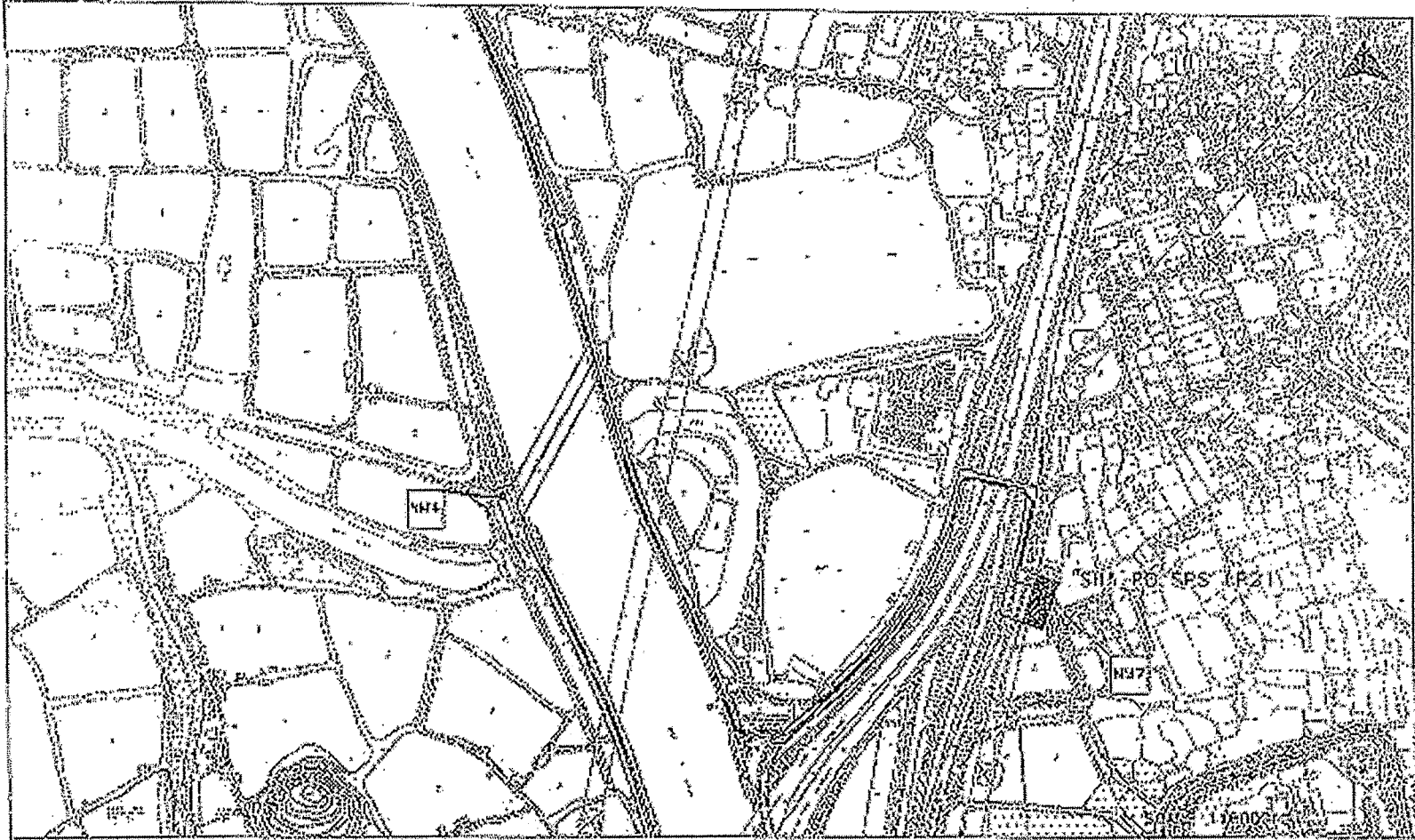


FIGURE 39.

LOCATION OF NOISE MONITORING STATIONS (NR74, NR75)

ENV 3811 12/2000-01/01/01
REV. 2002/01

Annex F

Event and Action Plan

Event and Action Plan for Construction Phase Air Quality

EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat dust measurements to confirm findings Increase monitoring frequency to daily Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed 	<ol style="list-style-type: none"> Check monitoring data submitted by ET Check monitoring data trends and Contractors working methods Check and confirm Contractors proposed remedial actions and working methods are appropriate 	<ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Inform complainant of actions taken, if necessary 	<ol style="list-style-type: none"> Rectify any unacceptable practice Liaise with Engineer and IEC to develop appropriate remedial measures to reduce dust impact Amend working methods and remedial proposals if required by the Engineer or IEC Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat measurements to confirm findings Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed Discuss remedial actions with IEC and Contractor If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions If exceedance stops, inform the Contractor and cease additional monitoring 	<ol style="list-style-type: none"> Check monitoring data submitted by ET Check monitoring data trends and Contractors working methods Discuss with Contractor and Engineer on possible remedial measures Check and confirm Contractors proposed remedial measures are appropriate Determine the efficacy of remedial actions and keep the Engineer informed 	<ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Ensure remedial measures are properly implemented Inform complainant of actions taken, if necessary. 	<ol style="list-style-type: none"> Rectify any unacceptable practice, if possible Submit proposals for remedial actions to Engineer and IEC within three working days of notification Discuss and amend remedial actions, if required, by the Engineer and IEC Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Limit Level				

Event and Action Plan for Construction Phase Air Quality

EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat dust measurements to confirm findings 3. Increase monitoring frequency to daily 4. Assess efficacy of remedial measures and keep the Contractor, IEC, Engineer and EPD informed 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC, 4. Ensure remedial measures are properly implemented 5. Inform complainant of actions taken, if necessary. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat measurements to confirm findings 3. Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed 4. Discuss remedial actions with IEC and Contractor 5. If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions 6. If exceedance stops, inform the Contractor and cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss with Contractor and Engineer on possible remedial measures 2. Check and confirm Contractors proposed remedial measures are appropriate 3. Determine the efficacy of remedial actions and keep the Engineer informed 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated 6. Inform complainant of actions taken, if necessary. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice, if possible 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions

Event and Action Plan for Construction Noise				
EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
<i>Limit Level</i>				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat dust measurements to confirm findings 3. If repeat measurements confirm exceedance, increase monitoring frequency to daily 4. Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed 5. If exceedance stops, inform Contractor and cease additional noise monitoring 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Inform complainant of actions taken, if necessary 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice 2. Liaise with Engineer and IEC to develop appropriate remedial measures to reduce noise impact 3. Amend working methods and remedial proposals if required by the Engineer or IEC 4. Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat measurements to confirm findings 3. Increase the monitoring frequency to daily 4. Discuss remedial actions with IEC, Engineer and the EPD 5. Assess the efficacy of remedial measures and keep the Contractor informed 6. If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions 7. If exceedance stops, inform the Contractor and cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Discuss with Contractor and Engineer on possible remedial measures 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated 6. Inform complainant of actions taken, if necessary. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice, if possible 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions 6. Stop the relevant portion of work as determined by the Engineer until the exceedance is abated

Annex G

Mitigation Implementation Schedule

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
CONSTRUCTION PHASE										
AIR QUALITY - Construction Phase										
		The following measures are enforceable under the <i>Air Pollution Control (Construction Dust) Regulations</i>								
3.5	A1	Site boundary and entrance <ul style="list-style-type: none"> where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the boundaries of the seven pumping stations sites and the works area where the Engineer's site office and the Contractor's site office erected; 	To prevent access to the site and control potential dust impacts from construction works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part III, Clause 13 (c), <i>Air Pollution Control (Construction Dust) Regulations</i>
3.5	A2	Access Road <ul style="list-style-type: none"> the portion of any road leading only to a construction site that is within 30 m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials; 	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part III, Clause 14, (b), <i>Air Pollution Control (Construction Dust) Regulations</i>
3.5	A3	Stockpiling of Dusty Materials <ul style="list-style-type: none"> any stockpile of dusty materials should be either covered entirely by impervious sheeting and placed in an area sheltered on the top and the 3 sides or sprayed with water so as to maintain the entire surface wet; 	To control potential dust impacts during excavation and stockpiling activities.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part IV, Clause 18, (a, b & c), <i>Air Pollution Control (Construction Dust) Regulations</i>
3.5	A4	Loading, unloading or transfer of dusty materials <ul style="list-style-type: none"> all dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading and unloading so as to maintain the dusty materials wet; 	To control potential dust impacts during material handling and truck movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part IV, Clause 19, <i>Air Pollution Control (Construction Dust) Regulations</i>
3.5	A5	Use of vehicles <ul style="list-style-type: none"> every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site; 	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part IV, Clause 21, (1), <i>Air Pollution Control (Construction</i>

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
3.5	A6	<ul style="list-style-type: none"> where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; 	To control potential dust impacts during material transportation.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Dust) Regulations Part IV, Clause 21, (2), Air Pollution Control (Construction Dust) Regulations
3.5	A7	<p>Power-driven drilling, and cutting</p> <ul style="list-style-type: none"> water should be continuously sprayed on the surface where any mechanical breaking operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; 	To control potential dust impacts during mechanical breaking.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part IV, Clause 22, Air Pollution Control (Construction Dust) Regulations
3.5	A8	<p>Excavation and earth moving</p> <ul style="list-style-type: none"> the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; 	To control potential dust impacts arising from excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Part IV, Clause 24, Air Pollution Control (Construction Dust) Regulations
3.5	A9	<p>Construction of the superstructure of a building</p> <ul style="list-style-type: none"> where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the round floor level of the SPS, or if a canopy is provided a the first floor level, from the first floor level, up to the highest level of the scaffolding; and 	To control potential dust impacts from SPS building construction works.	Full duration of SPS construction contract.	The Contractor		✓			Part I, Clause 6, (a), Air Pollution Control (Construction Dust) Regulations
3.5	A10	<ul style="list-style-type: none"> any skip hoist for material transport should be totally enclosed by the impervious sheeting. 	To control potential dust impacts during material transportation.	Full duration of SPS construction contract.	The Contractor		✓			Part I, Clause 6, (b), Air Pollution Control (Construction Dust) Regulations

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	OC	O	Dec	
		NOISE - Construction Phase								
4.7.1	B1	General Site Clearance – Demolition Works <ul style="list-style-type: none"> Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997</i> (Examples of these PME are shown in Table F2), 	To control potential noise impacts during site clearance and demolition works	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Annex 5 of EIAO-TM
4.7.1	B2	Construction of Sewage Pumping Stations P1, P2 & P3 <ul style="list-style-type: none"> Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997</i>, Adoption of temporary noise barrier, in the form of a site hoarding (with a superficial density of at least 20kg/m², with no substantial gaps), along the site boundary of the pumping station sites. 	To minimise potential noise impacts arising during the construction of P1, P2 & P3	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Annex 5 of EIAO-TM
4.7.1	B3	Sewers and Rising Mains using Open Trench Method <ul style="list-style-type: none"> Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997</i>, 	To control potential noise impacts during excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Annex 5 of EIAO-TM
4.7.1	B4	<ul style="list-style-type: none"> Use of handheld breakers for all initial road opening activities, when breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached. 	To control potential noise impacts during road opening activities.	Where there are NSRs located within 50m of the line of sight. Throughout the full duration of the road opening activities.	The Contractor		✓			
4.7.1	B5	<ul style="list-style-type: none"> Use of movable noise barriers or 3 sided enclosures for all initial road opening activities 	To control potential noise impacts during road opening	Where there are NSRs located within 50m of the	The Contractor		✓			

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
4.7.1	B6	enclosures for all initial road opening activities (breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached), where there are NSRs located within 50m of the line of sight from the works area. Sewers and Rising Mains using Pipe Jacking Method <ul style="list-style-type: none"> Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997,</i> 	activities. To control potential noise impacts from PME during construction works	line of sight. Throughout the full duration of the road opening activities. Site wide and throughout the full duration of the construction works	The Contractor		✓			Annex 5 of EIAO-TM
4.7.1	B7	Road Pavement and Finishes <ul style="list-style-type: none"> Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997,</i> 	To control potential noise impacts from PME during pavement and finish works	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Annex 5 of EIAO-TM
		WATER QUALITY - Construction Phase No water quality monitoring is required under this study.								
6.6.2	D1	WASTE - Construction Phase The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&D waste, <ul style="list-style-type: none"> Chemical Waste Producer and Chemical Waste Disposal Licence (<i>Waste Disposal (Chemical Waste) (General) Regulations</i>); and Dumping Licence (<i>Land (Miscellaneous Provisions) Ordinance (Cap 28)</i>) 	To monitor the collection, handling and disposal of chemical waste and C&D waste, and in compliance with relevant Hong Kong Standards and Regulations.	Site wide and throughout the full duration of the construction contract.	The Contractor	✓	✓			<i>Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28)</i>

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines			
						Des	C	O	Dec				
6.6.2	D2	<p>Chemical Waste Chemical waste that is produced, as defined by Schedule 1 of the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>, should be handled in accordance with the regulations and Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. All chemical waste producers should be registered with the EPD.</p>	<p>To control the handling, storage and disposal of chemical waste, in order to minimise potential spillages/leakages and human health and environmental impacts.</p>	<p>To be implemented at all worksites throughout the full duration of the construction phase.</p>	The Contractor		✓			<p><i>Part II, (6) Waste Disposal (Chemical Waste) (General) Regulation</i></p>			
6.6.2	D3	<p>Storage, Packaging and Labelling of Chemical Waste Containers used for storage of chemical wastes should:</p> <ul style="list-style-type: none"> be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 L unless the specifications have been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. 				<p>To ensure the proper storage, packaging and labelling of chemical waste in accordance with the Regulations.</p>	<p>To be implemented at all worksites throughout the full duration of the construction phase.</p>	The Contractor			✓		<p><i>Part IV, (9, 10, 11 & 12) Waste Disposal (Chemical Waste) (General) Regulation</i></p>
6.6.2	D4	<p>Storage of chemical waste The storage area for chemical wastes should:</p> <ul style="list-style-type: none"> be clearly labelled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and be arranged so that incompatible materials are 				<p>To ensure the proper storage of chemical waste in accordance with the Regulations.</p>	<p>To be implemented at all worksites throughout the full duration of the construction phase.</p>	The Contractor			✓		

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage**				Relevant Legislation & Guidelines
						Des.	C.	O.	Dec.	
		adequately separate								
6.6.2	D5	<p>Disposal of chemical waste</p> <ul style="list-style-type: none"> The Contractor should ensure that the disposal of chemical waste is via a licensed Waste Collector and in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulations</i>. <p>Management of Waste Disposal</p> <p>A trip-ticket system should be established which monitors the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping, in accordance with <i>Land (Miscellaneous Provisions) Ordinance (Cap 28)</i> and the <i>Works Bureau Technical Circular No. 5/99</i>.</p>	<p>To control the disposal of chemical waste in accordance with the Regulations.</p> <p>To monitor the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping.</p>	<p>To be implemented at all worksites throughout the full duration of the construction phase.</p> <p>To be implemented at all worksites throughout the full duration of the construction phase.</p>	<p>The Contractor</p> <p>The Engineer/ Contractor</p>		✓			<p><i>Part IV, (20 -25) Waste Disposal (Chemical Waste) (General) Regulation</i></p> <p><i>Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.</i></p>
7.5.6	E1	<p>LAND CONTAMINATION- Construction Phase</p> <p>A revised CAP should be submitted to the EPD for approval before the commencement of the construction works. Following receipt of the EPD's approval, the CAP shall be implemented and the findings of the investigations will be reported in the Contaminated Assessment Report (CAR), before ground disturbance is allowed at the concerned sites.</p> <p>If land contamination is confirmed, a Remediation Action Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval before disturbing the ground of the concerned sites. If applicable and required in consultation with the</p>	<p>To determine the presence of soil and groundwater contamination and remedy any potential concerns to acceptable levels.</p>	<p>To be Implemented before the commencement of the construction works.</p>	<p>To be Implemented by DSD or their sub-consultants at the Detailed Design Stage, depending upon when site access can be gained.</p>		✓			<p><i>EIAO TM Annex 19/3.1.1 & 3.1.2</i></p>

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
		EPD, the contaminated site(s) shall be remediated in accordance with the approved CAR/RAP.								
8.7.1	F1	<p>ECOLOGY - Construction Phase</p> <p>Mitigation Measures Adopted - Avoidance Construction activities shall be prohibited during the winter season (November to March) along the section of the proposed sewerage alignment, which fall within the Deep Bay Wetland Conservation Area and the Deep Bay Wetland Buffer Area (WCA and WBA) and close to the locations of ecologically sensitive species (including Intermediate Egret, Black-faced Spoonbill, Buzzard, Imperial Eagle and Avocet). (See Figure 8.7a attached). Regular site inspections (at least twice a month) should be conducted by the Environmental Team during the winter season (November to March) to ensure proper implementation of this restriction</p>	To schedule construction works in order to minimise potential impacts to winter visiting birds. To be confirmed by regular site inspections.	At identified location (Figure 8.7a) for the full duration of the construction contract.	The Contractor		✓			
8.7.2	F2	<p>Mitigation Measures Adopted - Minimisation Pipe jacking method should be used instead of dredging where sewers and rising mains cross over existing MDC within the WCA and WBA.</p>	To minimise potential construction noise impacts to ecological sensitive receivers within the WCA/WBA.	For the full duration of the construction contract.	The Contractor		✓			
8.7.2	F4	<p>Regular inspections (at least twice a month) should be conducted by the ET during the winter season (November to March) for the remaining sections of the proposed sewerage alignment (including parts of S4, S5 and S6) within the WCA and WBA, where construction activities cannot be rescheduled.</p> <p>The site inspections shall check and report the number of workfronts and implementation of</p>	To schedule noisy construction activities to minimise potential impacts to winter visiting birds.	Work fronts other than identified sections within WBA & WCA (see Figure 8.7a attached) throughout the full duration of the construction contract.	The Contractor		✓			

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
8.7.3	F5	mitigation measures (i.e. erection of movable noise barriers with a suitable footing along the sites) in the monthly EM&A reports. <i>Mitigation Measures Adopted</i> Quietened construction plant and equipment (as shown in <i>Table F2</i>) should be used for the construction of pumping stations (P3 and P2) and sewerage alignment (S4, S5 and S6) located within the WCA and WBA.	Quiet construction plant shall minimise potential noise impacts to the wildlife, particularly rare birds including Black-faced Spoonbill, Buzzard, Hobby, Imperial Eagle, Intermediate Egret, Avocet and Black-eared Kite	At described locations and throughout the full duration of the construction contract.	The Contractor		✓			
8.7.4	F6	Erection of fences along the boundary of pumping station construction sites (P1 to P3) before the commencement of construction works to prevent tipping, vehicle movements, and encroachment of personnel into adjacent areas, and P2 to avoid disturbance to the remaining pond areas (0.7 ha);	To erect fences to prevent encroachment of construction activities onto adjacent areas.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F7	No filling and dumping to the remaining abandoned fishpond at P2.	To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	At P2 for full duration of the construction contract	The Contractor		✓			
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note FN1/94 Construction Site Drainage. The minimal total combined volume of the silt removal facilities at Nam Sang Wai SPS (P3) should be 15m ³ .	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F9	No open fires within the site boundary during	To prohibit open fires, thereby	Site wide and throughout	The Contractor		✓			<i>Air Pollution Control</i>

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	O	O	Dec	
8.7.4	F7	construction and provide temporary fire fighting equipment in the work areas. No filling and dumping to the remaining abandoned fishpond at P2.	minimising potential damage to trees and shrubs. To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	the full duration of the construction contract. At P2 for full duration of the construction contract	The Contractor		✓			(Open Burning) Regulation
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note PN1/94 Construction Site Drainage.	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F9	No open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas.	To prohibit open fires, thereby minimising potential damage to trees and shrubs.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			Air Pollution Control (Open Burning) Regulation
		FISHERIES - Construction Phase No specific mitigation measures are required for inclusion in the EP.								
		CULTURAL HERITAGE – Not Applicable for Package 1A-1T (DC/2005/02)								
		LANDSCAPE AND VISUAL - Construction Phase								
	H1	The site inspections shall check and report the implementation of mitigation measures (i.e. top-soil are reused and new compensatory planting works are carried out immediately after the construction of the civil structure) in the monthly EM&A reports. The first monthly EM&A Report should also report the appearance of the temporary hoarding barriers.	To minimise potential landscape and visual impacts.	To be implemented during the construction phases of the project.	The Contractor		✓			
	H2	Prior to application for an Environmental Permit, a set of landscape plans and building elevations of the proposed pumping stations should be	To minimise potential landscape and visual impacts.	To be implemented during the design and construction phases of the	DSD and The Contractor	✓	✓			

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
		submitted for approval by the EPD. The landscape plans and pumping station elevations should demonstrate that the following elements are considered: <ul style="list-style-type: none"> existing landscape elements (such as mature trees), transplantation of valuable trees, new compensatory planting 		project.						
		<ul style="list-style-type: none"> incorporate information on materials, details and textures so as to be as visually recessive as possible and in a style that fits with the surrounding village buildings. colour should be of low chromatic intensity to reduce the potential contrast between the structures and their background. The external finishing of the Pumping Stations shall be designed in conjunction with the landscape scheme. a minimum screen planting of 3m width and use of trees with a dense canopy of up to 5 m in height subject to constraints such as engineering and land availability. felling of mature trees are kept to a minimum. 								
3.7	11	EM&A REQUIEMENTS - Construction Phase Air Quality Subject to the Environmental Protection Departments (EPDs) agreement, construction phase dust monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA. <ul style="list-style-type: none"> Worksite boundary facing Scattered house in Nam Sang Wai (AM1); Worksite boundary facing Fung Kat Heung (AM5); Worksite boundary facing Scattered House near Route 3 (AM6); 	Installations of the dust monitoring stations to ensure the action and limit levels are not exceeded.	At specified dust monitoring locations for the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer /DSD		✓			Air Pollution Control (Construction Dust) Regulations

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
4.9.1	12	<ul style="list-style-type: none"> at any additional locations, where considered necessary, in agreement with EPD. <p><i>Construction Noise</i> Subject to the Environmental Protection Departments (EPDs) agreement, construction phase noise monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA.</p> <ul style="list-style-type: none"> (NM3) Scattered House in Nam San Wai (D12); (NM4) Scattered House in Nam San Wai (D11); (NM6) Scattered House near Route 3 (D17); (NM7) Fung Kat Heung (D19); and at any additional locations, where considered necessary, in agreement with EPD 	Installations of the noise monitoring stations to ensure the action and limit levels are not exceeded.	At specified noise monitoring locations throughout the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer		✓			Noise Control Ordinance

Des = Design, C = Construction, O = Operation, Dec = Decommissioning

Annex H

Equipment Calibration Certificates

Equipment Calibration List for Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Project

Item	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1	Air	Greasby Anderson GMWS2310 High Volume Sampler	AM1	20 Nov 06	20 Feb 07
2		Greasby Anderson GMWS2310 High Volume Sampler	AM6	03 Oct 06	03 Jan 07
3		Greasby Anderson GMWS2310 High Volume Sampler	AM7	20 Nov 06	20 Feb 07
3	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2292167	13 Apr 06	13 Apr 07
4		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	24 Apr 06	24 Apr 07

Note: Calibration certificates will only be provided if monitoring equipment is re-calibrated or new.

* Calibration done in this reporting month, see calibration certificate attached.

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Nam Sang Wai	Date of Calibration: 20-Nov-06
Location ID : AM 1	Next Calibration Date: 20-Feb-07
	Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1015	Corrected Pressure (mm Hg)	761.25
Temperature (°C)	23.6	Temperature (K)	297

CALIBRATION ORIFICE

Make-> TISCH	Qstd Slope -> 1.54431
Model-> 515N	Qstd Intercept -> -0.01988

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	4.8	4.8	9.6	2.026	60	60.33	46.3995	-35.9388	0.9966
13	4.4	4.4	8.8	1.940	52	52.29			
10	3.2	3.2	6.4	1.656	40	40.22			
7	2.4	2.4	4.8	1.436	30	30.17			
5	1.2	1.2	2.4	1.019	12	12.07			

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

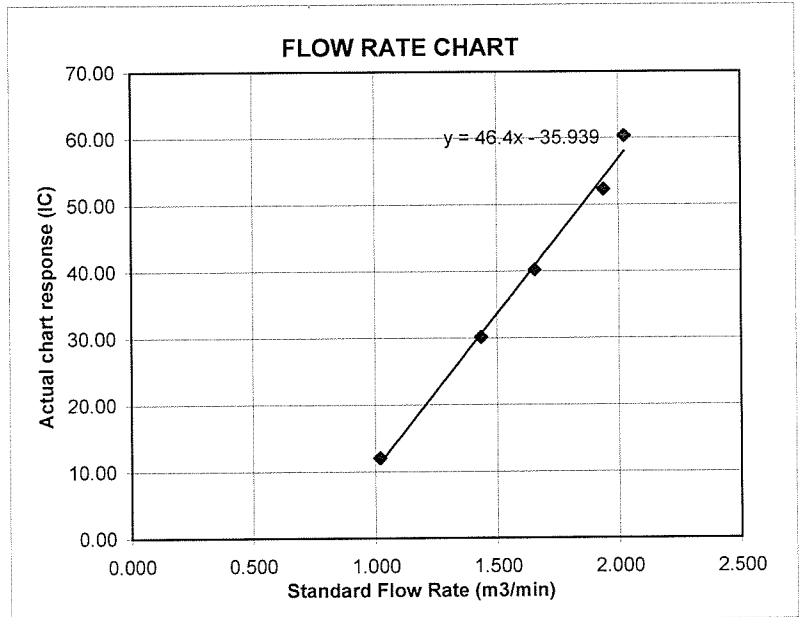
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Tai Hing Car Shop (Scattered House near Route 3) Date of Calibration: 3-Oct-06
 Location ID : AM 6 Next Calibration Date: 3-Jan-07
 Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1012.1	Corrected Pressure (mm Hg)	759.075
Temperature (°C)	26.5	Temperature (K)	300

CALIBRATION ORIFICE

Make-> TISCH	Qstd Slope ->
Model-> 515N	1.54431
	Qstd Intercept ->
	-0.01988

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	4.1	4.1	8.2	1.861	40	39.78	Slope =	35.9830	
13	3.3	3.3	6.6	1.671	33	32.81	Intercept =	-27.8187	
10	2.6	2.6	5.2	1.485	24	23.87	Corr. coeff. =	0.9957	
7	2.0	2.0	4.0	1.304	19	18.89			
5	1.3	1.3	2.6	1.054	11	10.94			

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

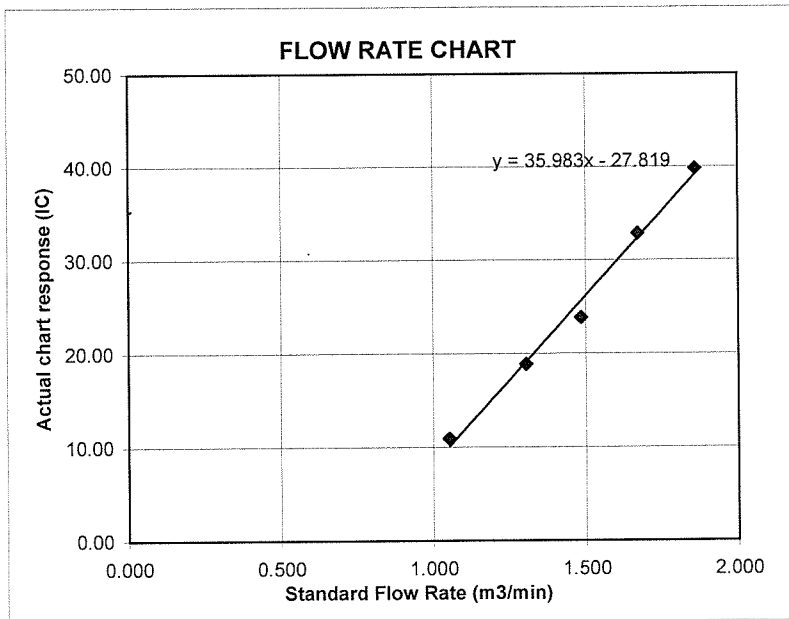
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Nam Sang Wai
Location ID : AM 7

Date of Calibration: 20-Nov-06
Next Calibration Date: 20-Feb-07
Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1015	Corrected Pressure (mm Hg)	761.25
Temperature (°C)	23.6	Temperature (K)	297

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.54431
Model->	515N	Qstd Intercept ->	-0.01988

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	4.8	4.8	9.6	2.026	47	47.26	34.9546	-25.1926	0.9951
13	3.7	3.7	7.4	1.780	35	35.19			
10	2.5	2.5	5	1.465	25	25.14			
7	2	2	4	1.312	21	21.12			
5	1.2	1.2	2.4	1.019	11	11.06			

Calculations :

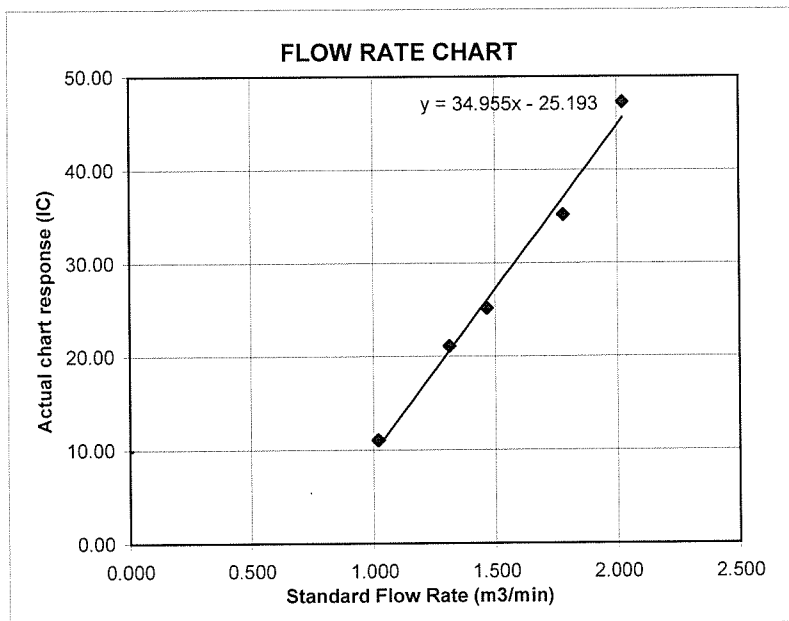
$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$
 $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$

Qstd = standard flow rate
 IC = corrected chart responses
 I = actual chart response
 m = calibrator Qstd slope
 b = calibrator Qstd intercept
 Ta = actual temperature during calibration (deg K)
 Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$

m = sampler slope
 b = sampler intercept
 I = chart response
 Tav = daily average temperature
 Pav = daily average pressure



Annex I

Meteorological Data in the Reporting Month

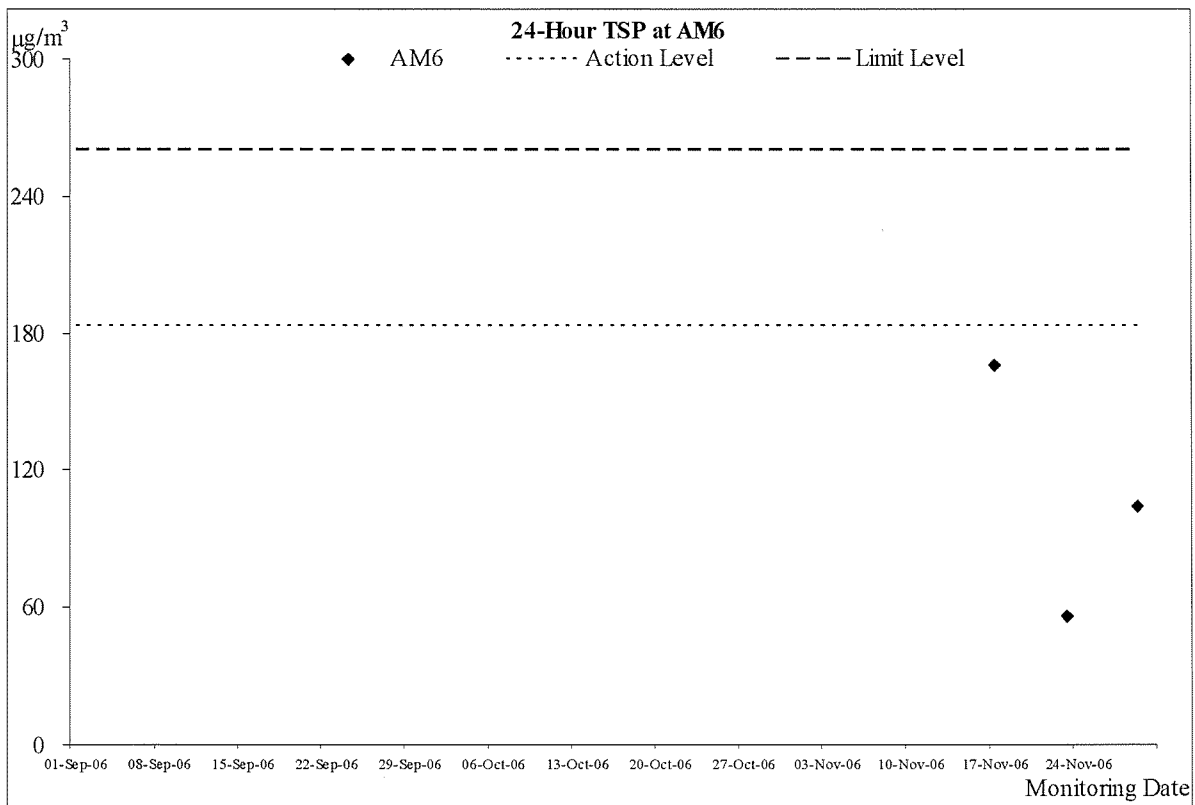
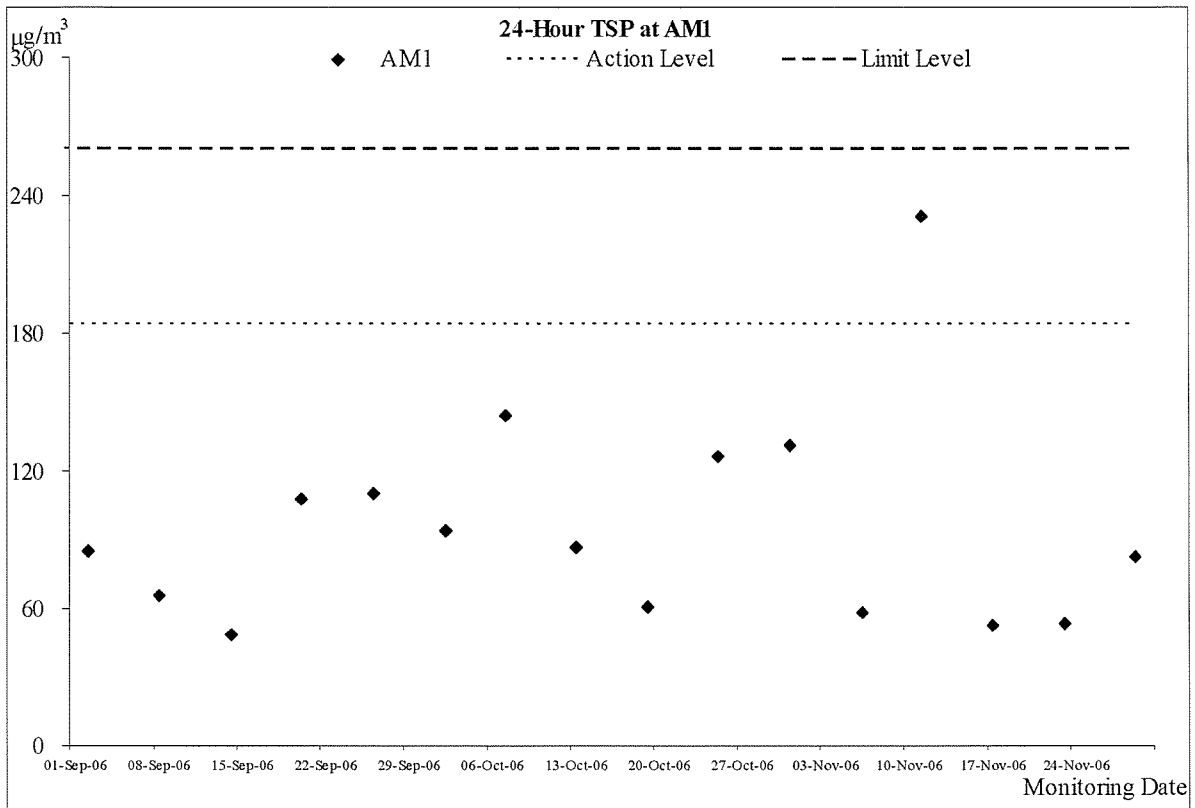
Meteorological Data Extracted From the HK Observatory at Lau Fau Shan Weather Station

Date		Weather	Lau Fau Shan Station				
			Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-Oct-06	Thu	fine/ hazy/ moderate	-	25.7	14	80	NE/E
27-Oct-06	Fri	fine/ dry/ haze/ moderate	Trace	24.6	14	75	NE/E
28-Oct-06	Sat	fine/ haze/ dry/ moderate	Trace	25.7	12	75	NE/E
29-Oct-06	Sun	fine/ dry/ hazy	Trace	25.8	holiday		
30-Oct-06	Mon	sunny	0.5	25.7	16	55	N/NE
31-Oct-06	Tue	dry/ hazy/ sunny/ cloudy/ moderate	Trace	25.7	19	55	N/NE
1-Nov-06	Wed	cloudy/ dry/ haze/ rain	-	24.6	35	45	N/NE
2-Nov-06	Thu	cloudy/ sunny/ dry	-	24.2	26		N/NE
3-Nov-06	Fri	fine/ dry/ haze	Trace	23.9	9	35	E
4-Nov-06	Sat	fine/ dry/ haze/ moderate	-	22.6	9	85	E/SE
5-Nov-06	Sun	fine/ dry/ hazy	-	24.3	9	60	E/SE
6-Nov-06	Mon	fine/ dry/ moderate	-	24.5	17	40	NE/E
7-Nov-06	Tue	fine/ dry/ moderate	-	23.8	16	55	E
8-Nov-06	Wed	fine/ dry/ moderate	-	23.6	16	65	E
9-Nov-06	Thu	fine/ haze/ dry/ moderate	-	25.1	9	75	E
10-Nov-06	Fri	fine/ dry/ cloudy/ haze	-	24.1	6	70	E/SE
11-Nov-06	Sat	fine/ dry/ haze/ moderate	-	26.3	6	85	E/SE
12-Nov-06	Sun	fine/ dry	-	23.4	17	40	E/SE
13-Nov-06	Mon	cloudy/ rain/ moderate	Trace	22.2	11	70	E
14-Nov-06	Tue	cloudy/ rain/ moderate	0.3	24	10	80	NE/E
15-Nov-06	Wed	cloudy/ rain	9.2	21.4	15	95	E
16-Nov-06	Thu	cloudy/ rain/ moderate	Trace	22.9	15	80	NE/E
17-Nov-06	Fri	cloudy/ sunny/ moderate	-	24.8	12	90	E
18-Nov-06	Sat	cloudy/ moderate	1.6	25.3	-		
19-Nov-06	Sun	cloudy/ moderate	Trace	23.2	15	80	NE/E
20-Nov-06	Mon	cloudy/ rain/ moderate	Trace	23.1	12	80	NE/E
21-Nov-06	Tue	cloudy/ rain/ thunderstorms	66.5	21.1	18	95	E
22-Nov-06	Wed	cloudy/ rain/ moderate	9.7	19.4	10	95	NW/N
23-Nov-06	Thu	cloudy/ rain/ moderate	3	21.1	10	80	NE/E
24-Nov-06	Fri	cloudy/ moderate	-	22.1	10	80	E
25-Nov-06	Sat	cloudy/ rain/ moderate	Trace	23.8	13	90	E
26-Nov-06	Sun	cloudy/ mist/ rain	1.2	25.5	15	Maintenance	S
27-Nov-06	Mon	cloudy/ rain/ mist/ moderate	7	22.4	9	Maintenance	NE/E
28-Nov-06	Tue	cloudy/ rain/ moderate	1.1	19.9	14	Maintenance	NE/E
29-Nov-06	Wed	cloudy/ rain/ moderate	Trace	19.9	10	Maintenance	NE/E
30-Nov-06	Thu	cloudy/ sunny/ moderate	-	19.7	15	Maintenance	NE/E

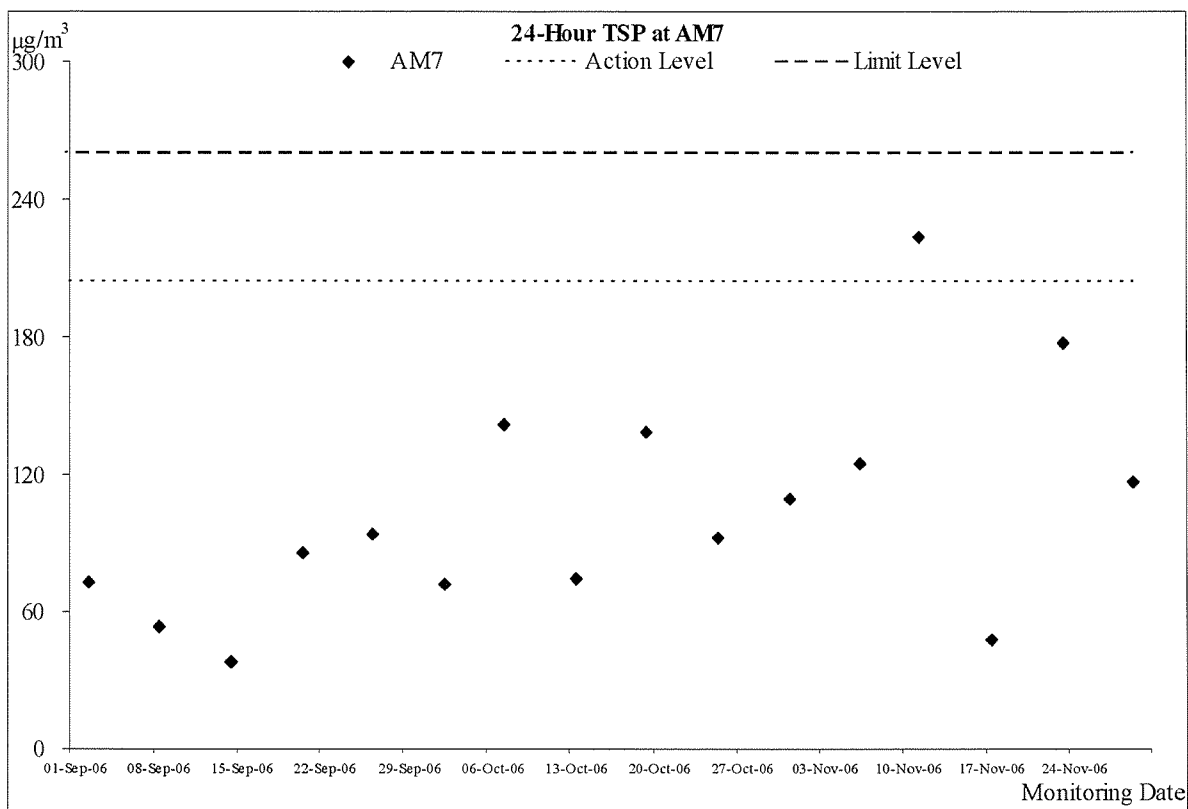
Annex J

**Graphical Plots of Air Quality
&
Noise Monitoring Results**

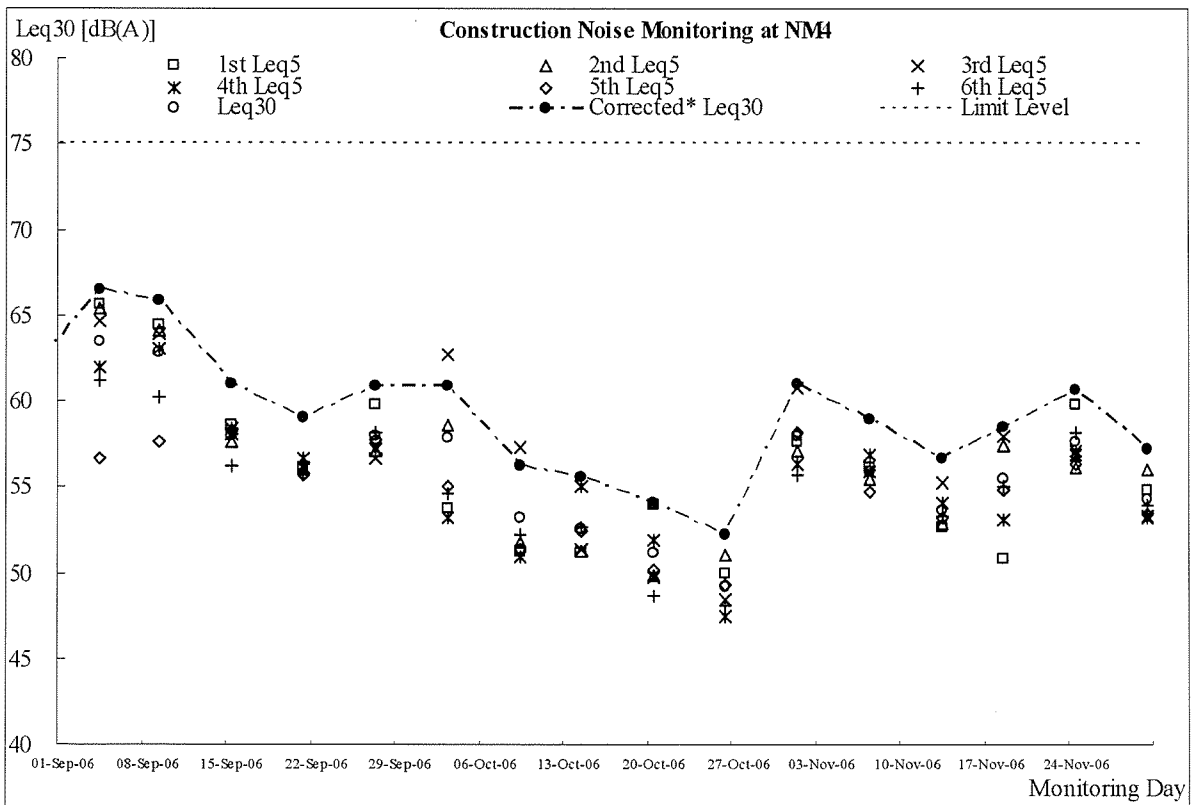
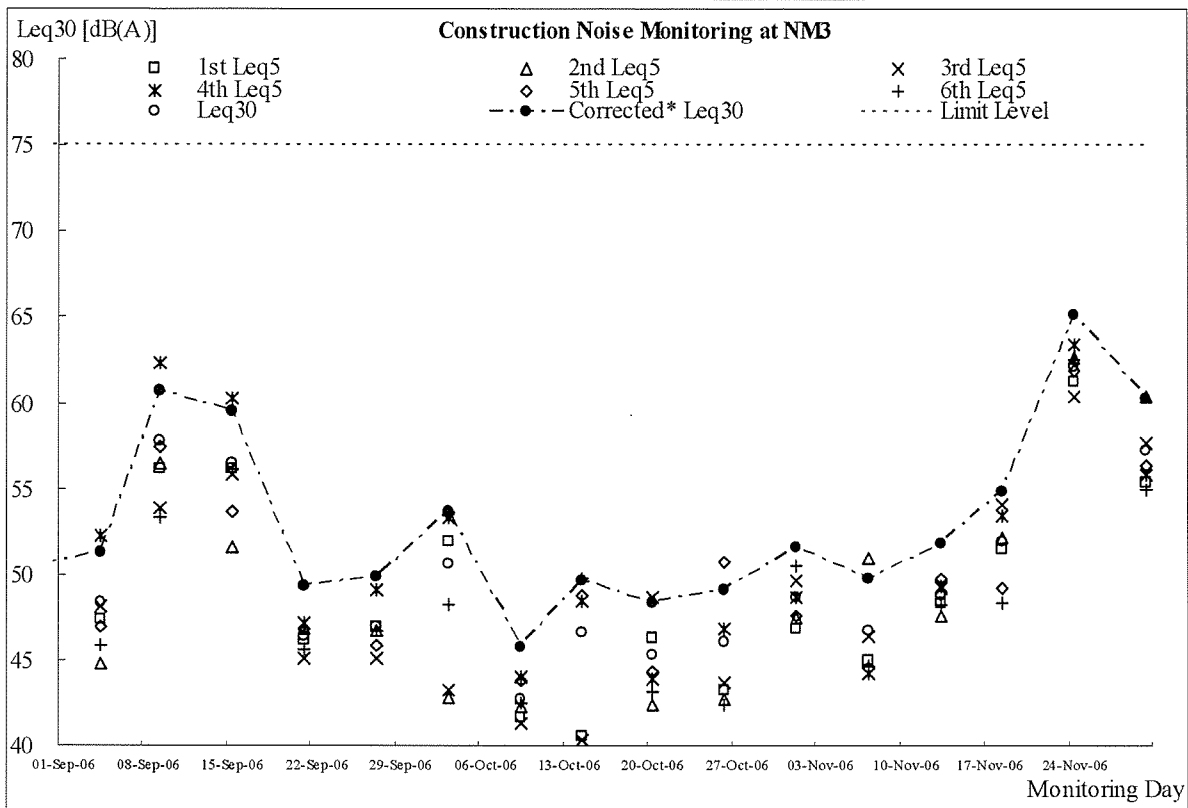
Air Quality Monitoring Results

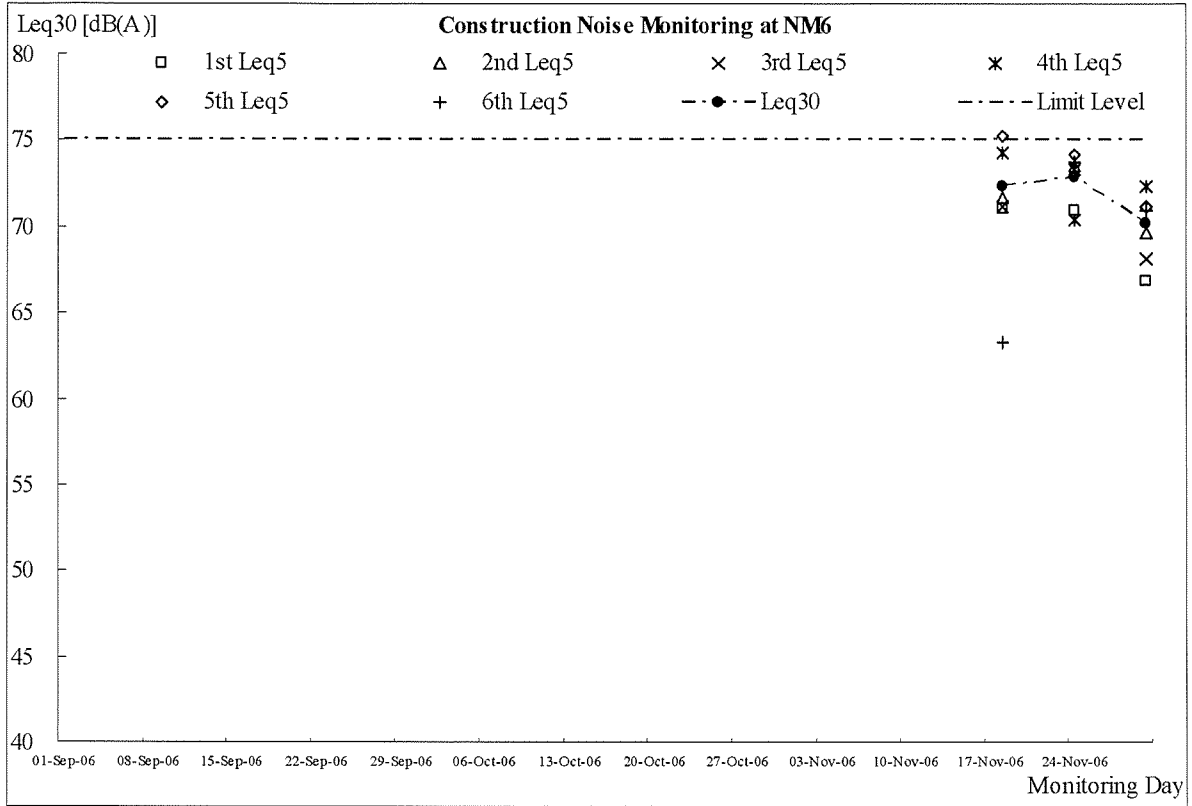


Note: 24-hour TSP impact monitoring was commenced on 17 November 2006.



Construction Noise Monitoring Results





Annex K

**Proforma of Site Inspection and IEC Audit
in the Reporting Period**

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is site effluent discharged in accordance with the discharge license?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is the discharge of silty water avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage system well maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there temporary ditches for runoff discharge into appropriate watercourse?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there sedimentation tanks for settling runoff prior to discharge?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	With adequate capacity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Free from silt and sediment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there neutralization tanks for concrete batching/mixing discharge?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there oil interceptors in drainage system?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is wheel wash facility provided at every site exit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are wheel washing facilities regularly inspected and maintained?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are toilets provided on site? If so, are they properly maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are manholes covered and sealed?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is oil leakage or spillage avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is there regular and proper disposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is proper sorting and recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Construction Waste:	Is generation of construction waste minimized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is waste sorting implemented on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is construction waste reused where practicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is construction waste properly disposed of?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical waste/waste oil	Is there designated storage area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is chemical waste stored properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is there proper disposal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is chemical waste license available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Excavated Materials	Do excavated materials appear uncontaminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are appropriate procedures followed if contaminated materials exist?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical/Fuel	Is chemical/fuel stored in banded area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is bund capacity adequate (>110% of the largest tank)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are storage areas lockable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Remarks:

Previous Audit Follow-up:

1. Sand and mud tails were cleaned in the site exit at portion E.

Observations Recorded in this Site Inspection:

2. Access road was observed dusty in portion E, contractor was reminded that to spraying water more frequency and reminder the driver keep the speed under 8 km/h to minimize the dust generation.

Signatures:

Env. Auditor

Contractor's Representative

IC(E) Auditor

Resident Site Staff

Name :Ben Tam

Name:

Name:

Name:

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	Contractor:	Leader Civil Engineering Corp. Ltd
Inspected by:	ET Auditor: Ben Tam	Engineer:	Babtie Asia Ltd
	Contractor Rep: Benny Lam / Edwin	IEC:	Mott Connell Ltd
	IEC's Rep: Nil	Environmental Team:	Action-United Env. Services & Consulting
	RE's Rep: Mr. S L Hui	Inspection Date & Time:	17 November 2006 at 10:00
		Checklist Reference No.:	DSD-AT171106

General Meteorological Information

Weather Sunny Fine Cloudy Overcast Drizzle Rain Hazy
Temp: °C
Humidity: High (RH > 90%) Moderate (90% > RH > 50%) Low (RH < 50%)
Wind: Calm Light Breeze Strong

Air Quality	Yes	No	NA	NC	Follow-up	Remarks
Is hoarding of not less than 2.4m provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are site vehicles traveling within controlled speed limit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OBS 1
Are site vehicles movement confined to designated haul roads?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are public roads outside site exits kept clean and free from dust?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OBS 1
Are there wheel washing facilities provided at site exits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is water spraying used during the main dust-generating activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the excavated or stockpile of dusty materials kept wet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is exposed area of ground covered or watered frequently?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are load on vehicles covered by clean impervious sheeting?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are vehicles and equipment switched off while not in use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is smoky emissions from plants/equipment avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is open burning avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Observable dust sources <input type="checkbox"/> Wind erosion						<input type="checkbox"/> Vehicle/equipment movements
<input type="checkbox"/> Loading/unloading of materials						<input checked="" type="checkbox"/> Others <u>Nil</u>

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the works or equipment sited to minimize noise nuisance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are all plant and equipment well maintained and in good operating condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is idle equipment turned off or throttled down?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is silenced equipment used where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are noise enclosures or noise barriers used where necessary?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does specified equipment has valid noise label?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are Construction Noise Permits (CNPs) available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Major Noise Source <input type="checkbox"/> Traffic						<input checked="" type="checkbox"/> Construction activities inside of site
<input type="checkbox"/> Construction activities outside of site						<input type="checkbox"/> Others _____

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is site effluent discharged in accordance with the discharge license?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is the discharge of silty water avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage system well maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there temporary ditches for runoff discharge into appropriate watercourse?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there sedimentation tanks for settling runoff prior to discharge?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are the sedimentation tanks: Constructed of pre-formed individual cells?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
With adequate capacity?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Free from silt and sediment?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there neutralization tanks for concrete batching/mixing discharge?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there oil interceptors in drainage system?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is wheel wash facility provided at every site exit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are wheel washing facilities regularly inspected and maintained?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are toilets provided on site? If so, are they properly maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are manholes covered and sealed?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is oil leakage or spillage avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is there regular and proper disposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is proper sorting and recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Construction Waste:	Is generation of construction waste minimized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is waste sorting implemented on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is construction waste reused where practicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is construction waste properly disposed of?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical waste/waste oil	Is there designated storage area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is chemical waste stored properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is there proper disposal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is chemical waste license available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Excavated Materials	Do excavated materials appear uncontaminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are appropriate procedures followed if contaminated materials exist?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical/Fuel	Is chemical/fuel stored in bunded area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Is bund capacity adequate (>110% of the largest tank)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Are storage areas lockable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Remarks:

Previous Audit Follow-up:

1. Water spraying was observed in the portion E to minimize the dust generation.

Observations Recorded in this Site Inspection:

Nil

Signatures:

Env. Auditor

Contractor's Representative

IC(E) Auditor

Resident Site Staff

Name :Ben Tam

Name:

Name:

Name:

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	Contractor:	Leader Civil Engineering Corp. Ltd
Inspected by:	ET Auditor: Ben Tam	Engineer:	Babtie Asia Ltd
	Contractor Rep: Benny Lam / Edwin	IEC:	Mott Connell Ltd
	IEC's Rep: Nil	Environmental Team:	Action-United Env. Services & Consulting
	RE's Rep: Mr. S L Hui	Inspection Date & Time:	23 November 2006 at 10:00
		Checklist Reference No.:	DSD-AT231106

General Meteorological Information

Weather Sunny Fine Cloudy Overcast Drizzle Rain Hazy
Temp: °C
Humidity: High (RH > 90%) Moderate (90% > RH > 50%) Low (RH < 50%)
Wind: Calm Light Breeze Strong

Air Quality	Yes	No	NA	NC	Follow-up	Remarks
Is hoarding of not less than 2.4m provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are site vehicles traveling within controlled speed limit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are site vehicles movement confined to designated haul roads?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are public roads outside site exits kept clean and free from dust?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there wheel washing facilities provided at site exits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is water spraying used during the main dust-generating activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are the excavated or stockpile of dusty materials kept wet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is exposed area of ground covered or watered frequently?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are load on vehicles covered by clean impervious sheeting?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are vehicles and equipment switched off while not in use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is smoky emissions from plants/equipment avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is open burning avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Observable dust sources <input type="checkbox"/> Wind erosion						<input type="checkbox"/> Vehicle/equipment movements
<input type="checkbox"/> Loading/unloading of materials						<input checked="" type="checkbox"/> Others <u>Nil</u>

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are the works or equipment sited to minimize noise nuisance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are all plant and equipment well maintained and in good operating condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is idle equipment turned off or throttled down?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is silenced equipment used where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are noise enclosures or noise barriers used where necessary?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Does specified equipment has valid noise label?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are Construction Noise Permits (CNPs) available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Major Noise Source <input type="checkbox"/> Traffic						<input checked="" type="checkbox"/> Construction activities inside of site
<input type="checkbox"/> Construction activities outside of site						<input type="checkbox"/> Others _____

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is site effluent discharged in accordance with the discharge license?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is the discharge of silty water avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is drainage system well maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there temporary ditches for runoff discharge into appropriate watercourse?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there sedimentation tanks for settling runoff prior to discharge?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are the sedimentation tanks: Constructed of pre-formed individual cells?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
With adequate capacity?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Free from silt and sediment?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remark 1
Are there neutralization tanks for concrete batching/mixing discharge?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are there oil interceptors in drainage system?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is wheel wash facility provided at every site exit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are wheel washing facilities regularly inspected and maintained?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are toilets provided on site? If so, are they properly maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are manholes covered and sealed?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is oil leakage or spillage avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Waste Management and Potential Land Contamination							
General Refuse: Are receptacles (rubbish bins) available?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is there regular and proper disposal?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is proper sorting and recycling implemented?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Construction Waste: Is generation of construction waste minimized?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is waste sorting implemented on site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is construction waste reused where practicable?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is construction waste properly disposed of?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are disposal records available for inspection?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical waste/waste oil Is there designated storage area?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is chemical waste stored properly?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is there proper disposal?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is chemical waste license available for inspection?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Excavated Materials Do excavated materials appear uncontaminated?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are appropriate procedures followed if contaminated materials exist?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are disposal records available for inspection?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical/Fuel Is chemical/fuel stored in bunded area?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is bund capacity adequate (>110% of the largest tank)?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Are storage areas lockable?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Remarks:

Previous Audit Follow-up:

Nil

Observations Recorded in this Site Inspection:

1. All sedimentation tank should be clear and free from water when it is not use. The Contract is reminded to clean immediately when the tank is not use.

Signatures:

Env. Auditor

Contractor's Representative

IC(E) Auditor

Resident Site Staff

Name :Ben Tam

Name:

Name:

Name:

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is site effluent discharged in accordance with the discharge license?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the discharge of silty water avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is drainage adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is drainage system well maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there temporary ditches for runoff discharge into appropriate watercourse?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there sedimentation tanks for settling runoff prior to discharge?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the sedimentation tanks: Constructed of pre-formed individual cells?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
With adequate capacity?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Free from silt and sediment?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remark 1
Are there neutralization tanks for concrete batching/mixing discharge?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there oil interceptors in drainage system?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is wheel wash facility provided at every site exit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are wheel washing facilities regularly inspected and maintained?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are toilets provided on site? If so, are they properly maintained?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are manholes covered and sealed?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is oil leakage or spillage avoided?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there regular and proper disposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is proper sorting and recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Construction Waste:	Is generation of construction waste minimized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is waste sorting implemented on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is construction waste reused where practicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is construction waste properly disposed of?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chemical waste/waste oil	Is there designated storage area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is chemical waste stored properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there proper disposal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is chemical waste license available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Excavated Materials	Do excavated materials appear uncontaminated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are appropriate procedures followed if contaminated materials exist?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are disposal records available for inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chemical/Fuel	Is chemical/fuel stored in bunded area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remarks 2&3
	Is bund capacity adequate (>110% of the largest tank)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are storage areas lockable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Remarks:

Previous Audit Follow-up:

1. All sedimentation tank should be clear and free from water when it is not use. The Contract is reminded to clean immediately when the tank is not use (Portion I).

Observations Recorded in this Site Inspection:

2. Drip tray should be provided for the free standing oil drum at Portion J.

3. Stagnant water was cumulated in the drip tray at Portion K, Contractor was reminded to clean as soon as possible.

Signatures:

Env. Auditor

Contractor's Representative

IC(E) Auditor

Resident Site Staff

Name :Ben Tam

Name:

Name:

Name: