

東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

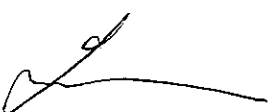
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**TEST REPORT**

**Kaden Construction Limited**

**CONTRACT NO. DC/2007/18**  
**YUNG SHUE WAN AND**  
**SOK KWU WAN VILLAGE SEWERAGE,**  
**STAGE 1 WORKS**  
**MONTHLY IMPACT MONITORING**  
**REPORT NO.5**  
**(OCTOBER 2008)**

Prepared by:   
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Checked by:   
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## Scott Wilson CDM Joint Venture

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Chief Engineer/Harbour Area Treatment Scheme  
Drainage Services Department  
5/F Western Magistracy  
2A Pok Fu Lam Road  
Hong Kong

Your reference:

Our reference: 05117/6/10/319013

Date: 14 November 2008

Attention: Mr. C K Au

**BY FAX ONLY**


Dear Sir

Agreement No. CE20/2005 (DS)  
Outlying Islands Sewerage Stage 1 Phase 1 Part 2 and Phase 2  
Yung Shue Wan and Sok Kwu Wan Sewerage, Sewage Treatment and Disposal – Design and Construction  
Monthly Impact Monitoring Report No. 5

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I refer to the Environmental Permit (EP-281/2007) and the email from the environmental team, ETS-Testconsult Limited with the revised report, dated 14 November 2008. I do not have further comment and have verified the captioned report.

Yours faithfully  
SCOTT WILSON CDM JOINT VENTURE



Rodney Ip

ANCP/anep

cc	Kaden Construction Ltd	(Attn: Mr Stephen Leung)
	ETS-Testconsult	(Attn: Ms Linda Law)
	ER/LAMMA	(Attn: Mr Alfred Cheung)
	CDM	(Attn: Mr Mark Sin)



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## EXECUTIVE SUMMARY

The Contractor, Kaden Construction Limited (Kaden), appointed Environmental Team of ETS-Testconsult Limited (ET) to undertake the environmental impact monitoring for "Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This Monthly Impact Monitoring Report No.5 has been prepared by the ET of ETS-Testconsult Limited to document the impact monitoring works conducted for the Project in October 2008.

### Construction Progress

The major construction works in this monitoring period were as below:

- Excavation work for installation of sewer pipe
- Construction of manhole

### Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring period is listed below:

- Noise Monitoring (Day-time): 5 Occasions at 4 designated locations;
- 24-hour TSP Monitoring: 6 Occasions at 4 designated locations;
- 1-hour TSP Monitoring: 18 Occasions at 4 designated locations.

### Impact Air Quality Monitoring

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the reporting period.

### Impact Noise Monitoring

One exceedance of Action Level was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. The details of the complaint refer to Section 8.2.

### Waste Management

According to weekly site inspection, ET found that the Contractor followed the recommended procedures stipulated in the Waste Management Plan (WMP) on handling and disposal of wastes. In this reporting month, 0.8 tonnes Public Fill (e.g. mix soil and rock) was generated and disposed to Sok Kwu Wan Refuse Transfer Station (SKWRTS) properly.

### Site Inspection

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET	02, 08, 14, 20 and 30 October 2008
RE / IEC / Kaden / ET	20 October 2008

According to the summary of the weekly site inspections carried out in this month, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

Summary of the site inspection findings in this reporting month is shown as below:



Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
1	Air	Excavated materials were stockpiled outside the manholes near works area S39, S167 and S56, and storage area beside S51 during the weekly site inspection on 02/10/08.	The Contractor replied to cover the excavated materials when not in use.	During the subsequent weekly site inspection on 08/10/08, the excavated materials were covered and hence no further verification is required to be taken by ET.
2	Air	Stockpile at S51 was found without cover during the weekly site inspections on 20/10/08 and 30/10/08.	The Contractor replied to cover all stockpiles.	Since the finding was still observed at the last weekly site inspection, it will be verified in the coming month.
3	Water	Export pipeline at S147 was found leaking during the weekly site inspection on 20/10/08.	The Contractor replied to repair and maintain all pipeline properly to avoid any leakage.	During the subsequent weekly site inspection on 30/10/08, no pipeline was noted at S147.
4	Chemical	Follow up action to the outstanding finding in the previous month, oil stain was cleaned up during weekly site inspection on 02/10/08.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
5	Chemical	Oil leakage was noted from a defect excavator at storage area W2B during the weekly site inspection on 02/10/08.	The Contractor replied to repair and maintain all excavators properly to avoid oil leakage.	The defect excavator was found removed during the weekly site inspection 20/10/08.
6	Chemical	A generator at S56 was found without drip tray during the weekly site inspection on 08/10/08.	The Contractor replied to provide drip tray for all generators.	During the subsequent weekly site inspection on 14/10/08, drip tray was found provided for the generator.
7	Chemical	Oil stain was noted under a working excavator in front of 袁園 during the weekly site inspection on 14/10/08.	The Contractor replied to clean up the oil stain and repair the defect excavator.	During the subsequent weekly site inspection on 20/10/08, no oil stain was noted and the excavator was removed for repairing.
8	Chemical	Two chemical containers were noted at S148 without drip tray during the weekly site inspection on 20/10/08.	The Contractor replied to provide drip trays for all chemicals.	During the subsequent weekly site inspection on 30/10/08, the chemicals were removed.

### **Environmental Complaints, Notifications of Summons and Successful Prosecutions**

No notifications of summons and successful prosecutions were received in this reporting period.

A complaint received on 17 October 2008 through email by the RE was from the owner of House 14 on 15 October 2008 about noise generated from the concrete pavement breaking works carried out at the adjacent to the house in the morning of that day.

After the discussion of the complaint in SSEMC meeting with the RE, ET and Kaden on 17 October 2008, it concluded that the complaint was valid and due to the works. Refer to the EM&A Manual, more mitigation measures was required to be taken by Kaden immediately to minimize noise nuisance to the public.

During the complaint investigation hold by RE, IEC, ET and Kaden on 20 October 2008, no concrete breaking work was observed near House 14 and no other noise impact was noted generated from the construction activities. However, RE, IEC and ET still reminded Kaden to provide appropriate mitigation measures, such as using noise barrier and well planning in works schedule, to minimize noise nuisance to the public. Kaden agreed to rearrange the time such as working in the afternoon for the concrete breaking works and provide movable barriers for the concrete breaking works in order to minimize noise nuisance.

No complaint was received subsequent to the implementation of mitigation measures by Kaden. Hence, it was believed that Kaden have provided appropriate measures to mitigate the problem.



### **Conclusion and Recommendations**

The monitored environmental data indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental mitigation measures had been effective in controlling potential impacts to within acceptable sensitive receivers. Besides, the Contractor was recommended to maintain good site practice in order to minimize the environmental impacts at the site.

### **Construction Programme for Coming Month**

The Construction programme for the Project is shown in Appendix E.

As informed by the Contractor, the activities to be conducted by them in coming month included:

- *Excavation work for installation of sewer pipe*
- *Construction of manhole*

### **Future Key Issues**

Based on the forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Noise and air quality impact due to construction works; and*
- *Maintain good site practice to minimize environmental impacts at the site.*

### **Internet Website**

The monthly EM&A report can be accessed on the web at <http://www.skwsewer.com>.



## 1.0 INTRODUCTION

The Customer, Kaden Construction Limited (Kaden), appointed Environmental Team of ETS-Testconsult Limited to undertake the environmental impact monitoring for "Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

In accordance with the Section 5 of the EP, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A manual, environmental monitoring of air quality and noise is required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study report;
- Environmental requirements in contract documents.

This monthly EM&A report summarizes the impact monitoring in September 2008. This monthly EM&A report can be accessed on the web at <http://www.skwsewer.com>.

## 2.0 PROJECT INFORMATION

### 2.1 Background

Under this Project, Kaden is required to construct village sewerage in Yung Shue Wan and Sok Kwu Wan, Lamma Island.

Village sewage works will undertake in this Project. These will comprise laying approximately 1.4km of sewerage pipes from 220mm to 350mm diameter in Sok Kwu Wan Village. These works will carry out under a conventional Design, Bid, Build (DBB) contract, entirely separate from the single Design, Build and Operate (DBO) contract for Sewage Treatment Works (STW) construction.

As the main Contractor of the captioned project contracted by, Kaden will follow the environmental monitoring recommendation stated in the EM&A Manual that was prepared with reference to the EIA Report (Register No.: AEIAR-075/2003).

According to the EP and the EM&A Manual, the environmental programme is mainly focused on the construction activities of this Project in Sok Kwu Wan. At the same time, all air quality and noise monitoring stations proposed in the EM&A Manual are located in Sok Kwu Wan. The baseline report is prepared in accordance with EP (No. EP-281/2007) for the Designated Project "Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" and the EM&A Manual.

### 2.2 Site Description

The general layout plan of the project in Sok Kwu Wan is shown in Drawing No. 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006.

Surrounding the construction site, there are air and noise sensitive receivers at Chung Mei Village, Sok Kwu Wan and Ta Shui Wan.

### 2.3 Construction Programme

The construction programme is shown in Appendix E.



## 2.4 Project Organization and Management Structure

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix A.

## 2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Key Staff	Tel. No.	Fax No.
Scott Wilson CDM JV	Engineer Representative	Ir Ian J Jones	2982 0240	2982 4129
Scott Wilson CDM JV	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
Kaden Construction Ltd	Contractor	Ir Stephen Leung	2454 9102	2465 1207
ETS-Testconsult Ltd	Environmental Team	Mr. C L Lau	2946 7791	2695 3944

## 2.6 Construction Progress in this reporting month

A summary of the major construction activities undertaken in this monitoring month were:

- Excavation work for installation of sewer pipe
- Construction of manhole

## 3.0 IMPACT AIR QUALITY MONITORING

### 3.1 Monitoring Requirement

Both 1-hr and 24-hr TSP monitoring is required to be conducted in order to monitor the air quality of the environment during the construction period. For regular monitoring, a sampling frequency of at least one in every six days should be carried out at all designated monitoring stations.

### 3.2 Monitoring Equipment

#### 24-hour TSP Monitoring

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets are employed for 24-hour TSP. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

#### Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

#### Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

Prior to the commencement of the air sampling, the flow rate of the high volume sampler was properly set (between 0.6m<sup>3</sup>/min and 1.7m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.



- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$  and the relative humidity (RH)  $<50\% \pm 5\%$ .

#### Maintenance & Calibration

- The HVS and their accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- The HVSs used were calibrated before the commencement of air quality monitoring, after maintenance and every two months. Five-point calibration by using calibration kit (e.g. Tisch TE-5025A) was performed to establish a relationship between the flow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, QStd, in  $\text{m}^3/\text{min}$ .

#### **1-hour TSP Monitoring**

1-hour TSP levels were measured by using 1-hour dust meter which are capable of producing comparable results as the by high volume sampling method, to indicate short event impacts.

#### Measuring Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Set POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Calibrate the dust meter by zero check;
- Set the TIME CONSTANT of the dust meter;
- Press SAMPLE to start the TSP monitoring;
- Record the maximum, minimum and average reading directly from the dust meter by press STATISTICS when monitoring complete.

#### Maintenance & Calibration

- 1-hour dust meter should be checked at 6-month intervals throughout all stages of impact air quality monitoring. Through a five-point calibration by placing the dust meter and calibrated HVS under the same environmental condition, a relationship in TSP level ( $\mu\text{g}/\text{m}^3$ ) between dust meter and HVS was established.

### **3.3 Laboratory Measurement / Analysis**

Environmental Laboratory of ETS-Testconsult which is HOKLAS accredited, carried out the laboratory analysis.

A clean filter paper with no pinholes was used for each time of monitoring. Before sampling, the filter paper of size 8" x 10" was labelled and conditioned in a humidity controlled chamber for over 24 hours and pre-weighed before use for the sampling.

After sampling, the filter paper loaded with dust was kept in a clean and tightly sealed plastic bag. The filter paper then returned to the laboratory for reconditioning in the humidity controlled chamber following by accurate weighing by an electronic balance with readout down to 0.1mg. The balance was calibrated against a traceable standard.

All the analysis results and collected samples were kept in a good condition for 6 months after completion of the monitoring exercise before disposal.

### 3.4 Monitoring Parameters, Frequency and Duration

Table 3.1 summarizes the monitoring parameters, monitoring duration and frequencies of impact air quality monitoring.

Table 3.1 Monitoring parameters, duration and frequencies of impact air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr (0000-2400)	One in every six days
1-hr TSP	1 hr (0700-1900)	3 times per day in every six days

### 3.5 Monitoring Locations

As the requirement in the EM&A Manual, three designated air monitoring stations were selected. Table 3.2 tabulates the air quality monitoring locations of this Project.

Table 3.2 Air monitoring stations

Air monitoring station	Description of location
AM1	Squatter house in Chung Mei Village
AM2	Squatter house in Chung Mei Village
AM3	Football Court

### 3.6 Action and Limit Levels

Action and Limit levels for 24-hr TSP and 1-hr TSP derived as illustrated in Table 3.3.

Table 3.3 Action and Limit levels for 24-hr TSP and 1-hr TSP

Monitoring Station	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
AM1	173	260	343	500
AM2	175	260	331	500
AM3	191	260	353	500

### 3.7 Event-Action Plans

Should the results of the monitoring parameters at any designated monitoring stations indicate that the air quality criteria are exceeded, the actions in accordance with the Event and Action Plan that summarized in Appendix D should be carried out.

### 3.8 Results

Totally 6 occasions of 24-hr TSP monitoring and 18 occasions of 1-hr TSP monitoring were carried out in this reporting period. All monitoring data of 1-hr and 24-hr TSP monitoring is provided in Appendix B2. Graphical presentation of both 1-hr and 24-hr TSP monitoring results for the reporting month is shown in Appendix B3.

No exceedances of Action and Limit Level of 1-hr and 24-hr TSP monitoring results were recorded during the reporting month. Table 3.4 summaries the 1-hr and 24-hr TSP monitoring results.

Table 3.4 Summary of 1-hr and 24-hr TSP Monitoring Results

Parameter	1-hr TSP Monitoring								
	AM1			AM2			AM3		
Station	Time	Result	Exceed*	Time	Result	Exceed*	Time	Result	Exceed*
02/10/08	08:15	96	X	13:10	101	X	13:30	135	X
02/10/08	09:15	82	X	14:10	120	X	14:30	159	X
02/10/08	10:15	76	X	15:10	119	X	15:30	122	X
08/10/08	13:30	165	X	13:40	166	X	09:10	212	X
08/10/08	14:30	216	X	14:40	177	X	10:10	192	X
08/10/08	15:30	191	X	15:40	156	X	11:10	224	X
14/10/08	09:30	154	X	09:33	160	X	13:05	201	X
14/10/08	10:30	144	X	10:33	150	X	14:05	186	X
14/10/08	11:30	146	X	11:33	136	X	15:05	192	X
20/10/08	09:11	157	X	09:13	156	X	13:00	170	X
20/10/08	10:11	147	X	10:13	161	X	14:00	219	X
20/10/08	11:11	131	X	11:13	129	X	15:00	185	X
24/10/08	09:14	124	X	09:16	134	X	13:00	155	X
24/10/08	10:14	135	X	10:16	157	X	14:00	150	X
24/10/08	11:14	140	X	11:16	136	X	15:00	162	X
30/10/08	09:10	205	X	09:14	214	X	13:00	223	X
30/10/08	10:10	197	X	10:14	226	X	14:00	205	X
30/10/08	11:10	159	X	11:14	176	X	15:00	175	X

Parameter	24-hr TSP Monitoring					
	AM1		AM2		AM3	
Station	Result	Exceed*	Result	Exceed*	Result	Exceed*
02/10/08	74	X	86	X	143	X
08/10/08	52	X	57	X	127	X
14/10/08	60	X	57	X	81	X
20/10/08	83	X	67	X	77	X
24/10/08	65	X	82	X	159	X
30/10/08	64	X	59	X	86	X

Remark (\*): L=Limit Level exceedance, A=Action Level exceedance and X=not an exceedance

#### 4.0 IMPACT NOISE MONITORING

##### 4.1 Monitoring Requirements

As the requirement in the EM&A Manual, impact noise monitoring was conducted for a weekly basis at designated monitoring locations.

##### 4.2 Monitoring Equipment

Integrating Sound Level Meters used for impact noise monitoring were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). They complied with International Electro technical Commission Publications 651:1979 (Type1) and speed in m/s was used to monitor the wind speed. Table 4.1 summarized the noise monitoring equipment model used during the impact monitoring. Copies of calibration certificates and Calibration Summary for noise meters and calibrators used are attached in Appendix C1.

Table 4.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31 Sound Level Meter
Calibrator	Rion NC-73 Sound Level Meter
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter



### 4.3 Monitoring Parameters, duration and Frequency

Impact noise monitoring for the A-weighted levels  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded once per week. Data obtained from impact noise monitoring was processed and presented as below:

- Daytime: three sets of 30-minute noise level monitored between 0700-1900 hrs on normal weekdays;
  - Evening-time\*: three sets of 5-minute noise level monitored between 1900-2300 hrs ;
  - Night-time\*: three sets of 5-minute noise level monitored between 2300-0700 hrs of next day; and
  - Holiday\*: three sets of 5-minute noise level monitored between 0700-1900 hrs on holiday.
- (\*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 4.2.

Table 4.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	Parameters
Day-time: 0700-1900 hrs on normal weekday	30	$L_{eq}$ , $L_{10}$ , $L_{90}$
Evening-time: 1900-2300 hrs	5	$L_{eq}$ , $L_{10}$ , $L_{90}$
Night-time: 2300-0700 hrs of next day	5	$L_{eq}$ , $L_{10}$ , $L_{90}$
Holiday: 0700-1900 hrs	5	$L_{eq}$ , $L_{10}$ , $L_{90}$

### 4.4 Monitoring Locations

Since the owner of 1B Sok Kwu Wan objected to set up the noise monitoring station NM3 at 1B Sok Kwu Wan (Eastern Façade), an alternative position, Sok Kwu Wan Sitting-out Area RNM3, which is just a 3m width footpath away from house 1B for the free field noise measurement, was proposed by ET. Under the approval from ER and agreement from the IEC and EPD, both baseline and impact noise monitoring was carried out at RNM3.

Hence, there were four noise monitoring locations NM1, NM2, RNM3 and NM4 required to carry out impact noise monitoring.

The details of noise monitoring stations are summarized in Table 4.3.

Table 4.3 Noise Monitoring Stations

Noise monitoring station	Description of location	Type of Measurement
NM1	1, Chung Mei Village	Façade
NM2	20, Sok Kwu Wan	Façade
RNM3	Sok Kwu Wan Sitting-out Area	Free Field
NM4	2-storey village house at Ta Shui Wan	Façade

### 4.5 Monitoring Methodology

#### Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

#### Operation/Analysis Procedures

- Sound Level Meter was set on a tripod at a height of 1.2m above the ground;
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter;
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting : A
  - Time weighting : Fast
  - Time measurement : 5 mins

- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment;
- During the monitoring period, the  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- Noise measurement may be paused during periods of high intrusive noise (e.g. dog barking directly towards the receiver of noise level meter). If noise measurement was paused during high intrusive noise, the noise level meter would be resumed and continued the noise measurement and the observations would also be recorded. Any pause intervals were not included in the measurement time; and
- Noise monitoring would be cancelled in the presence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

#### Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth at quarterly intervals; and
- The meters are sent to supplier or HOKLAS laboratory to check and calibrated at yearly intervals.

#### 4.6 Actions and Limit Levels

The Action and Limit Levels (AL Levels) were established in accordance to the Clause 3.6.4 of the EM&A Manual. Table 4.4 presents the AL levels for noise monitoring.

Table 4.4 Action and Limit Levels for Noise Monitoring

<i>Time Period</i>	<i>Action</i>	<i>Limit</i>
<i>0700 – 1900 hrs normal weekdays</i>	<i>When one documented complaint is received</i>	<i>75 dB(A)</i>

#### 4.7 Event-Action Plans

Should the results of the monitoring parameters at any designated monitoring stations indicate that the noise level criteria are exceeded, the actions in accordance with the Event and Action Plan that summarized in Appendix D should be carried out.

#### 4.8 Results

Totally 5 occasions of Day-time noise monitoring were carried out at monitoring stations in this reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during the night-time period.

One exceedance of Action Level was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring. Table 4.5 summaries the noise daytime monitoring results in the reporting period.

Table 4.5 Summary of Noise Daytime Monitoring Results

<i>Monitoring Parameter</i>	<i>Date</i>	<i>NM1</i>		<i>NM2</i>		<i>RNM3<sup>#</sup></i>		<i>NM4</i>	
		<i>Result</i>	<i>Exceedance*</i>	<i>Result</i>	<i>Exceedance*</i>	<i>Result</i>	<i>Exceedance*</i>	<i>Result</i>	<i>Exceedance*</i>
<i>Noise Daytime Monitoring</i>	<i>02/10/08</i>	<i>54.4</i>	<i>X</i>	<i>66.7</i>	<i>X</i>	<i>57.4</i>	<i>X</i>	<i>58.8</i>	<i>X</i>
	<i>08/10/08</i>	<i>52.7</i>	<i>X</i>	<i>66.7</i>	<i>X</i>	<i>63.8</i>	<i>X</i>	<i>59.7</i>	<i>X</i>
	<i>14/10/08</i>	<i>58.1</i>	<i>X</i>	<i>61.8</i>	<i>X</i>	<i>72.6</i>	<i>X</i>	<i>65.0</i>	<i>X</i>
	<i>20/10/08</i>	<i>60.5</i>	<i>X</i>	<i>62.0</i>	<i>X</i>	<i>74.7</i>	<i>X</i>	<i>49.5</i>	<i>X</i>
	<i>30/10/08</i>	<i>58.1</i>	<i>X</i>	<i>62.5</i>	<i>X</i>	<i>64.9</i>	<i>X</i>	<i>57.3</i>	<i>X</i>

Remark (\*): L = Limit Level exceedance, A = Action Level exceedance and X = not an Exceedance  
(#): 3dB(A) correction had been added to the results since noise measurements at RNM3 were free-field.

## 5.0 SITE INSPECTION

During this reporting month, weekly site inspections were undertaken on 02, 08, 14, 20 and 30 October 2008 by ET. Monthly joint site inspections at 20 October 2008 were carried out by Engineer's Representative, IEC, Kaden and ET. A summary of implementation status of mitigation measures on site inspections is presented in Appendix F.

### 5.1 Summary of the site inspection findings and Action(s) taken by Kaden and ET

According to the summary of the weekly site inspections carried out in this month, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. Summary of the site inspection findings in this reporting month is shown in Table 5.1.

Table 5.1 Summary of Site Inspection Findings and Action(s) taken by Kaden and ET

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
1	Air	Excavated materials were stockpiled outside the manholes near works area S39, S167 and S56, and storage area beside S51 during the weekly site inspection on 02/10/08.	The Contractor replied to cover the excavated materials when not in use.	During the subsequent weekly site inspection on 08/10/08, the excavated materials were covered and hence no further verification is required to be taken by ET.
2	Air	Stockpile at S51 was found without cover during the weekly site inspections on 20/10/08 and 30/10/08.	The Contractor replied to cover all stockpiles.	Since the finding was still observed at the last weekly site inspection, it will be verified in the coming month.
3	Water	Export pipeline at S147 was found leaking during the weekly site inspection on 20/10/08.	The Contractor replied to repair and maintain all pipeline properly to avoid any leakage.	During the subsequent weekly site inspection on 30/10/08, no pipeline was noted at S147.
4	Chemical	Follow up action to the outstanding finding in the previous month, oil stain was cleaned up during weekly site inspection on 02/10/08.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
5	Chemical	Oil leakage was noted from a defect excavator at storage area W2B during the weekly site inspection on 02/10/08.	The Contractor replied to repair and maintain all excavators properly to avoid oil leakage.	The defect excavator was found removed during the weekly site inspection 20/10/08.
6	Chemical	A generator at S56 was found without drip tray during the weekly site inspection on 08/10/08.	The Contractor replied to provide drip tray for all generators.	During the subsequent weekly site inspection on 14/10/08, drip tray was found provided for the generator.
7	Chemical	Oil stain was noted under a working excavator in front of 袁園 during the weekly site inspection on 14/10/08.	The Contractor replied to clean up the oil stain and repair the defect excavator.	During the subsequent weekly site inspection on 20/10/08, no oil stain was noted and the excavator was removed for repairing.
8	Chemical	Two chemical containers were noted at S148 without drip tray during the weekly site inspection on 20/10/08.	The Contractor replied to provide drip trays for all chemicals.	During the subsequent weekly site inspection on 30/10/08, the chemicals were removed.

## 5.2 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- Providing dust suppression measures (such as water spraying) during the construction works especially excavation and earth moving operation;
- Checking and maintaining all the site machines to prevent black smoke emission;
- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Maintain good waste management at the site; and
- Remove all stagnant water and applied proper treatment facilities to wastewater before discharge.

## 6.0 Status of Environmental Permits

All permits/licenses obtained in this reporting month are summarized in Table 6.1.

Table 6.1 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-281/2007	29/06/07	End of Project	Valid
Water Discharge Licence	EP890/W2/XD 026	23/05/08	31/03/12	Valid Discharge of Industrial Trade Effluent arising from Construction Site to communal storm water drain
Notification under APCO	Application had been submitted to EPD on 15 April 2008			

## 7.0 WASTE MANAGEMENT

The quantities of waste for disposal from Sok Kwu Wan in this month are summarized in Table 7.1.

Table 7.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (tonne)	20.8		371.8
	Broken Concrete (tonne)	0	N/A	0
	Reused in the Contract (tonne)	20	For Stockpile / Reuse	70
	Reused in other Projects (tonne)	0	N/A	180.0
	Disposal as Public Fill (tonne)	0.8	SKWRTS	121.8
C&D Waste	Metals (1000kg)	0	N/A	0
	Paper/Cardboard Packaging (1000kg)	0	N/A	0
	Plastics (1000kg)	0	N/A	0
	Chemical Waste (1000kg)	0	N/A	0
	Other, e.g. General Refuse (tonne)	0	SKWRTS	1.34

## 8.0 ENVIRONMENTAL NON-CONFORMANCE

### 8.1 Summary of Air Quality and Noise monitoring

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting period.

One exceedance of Action Level of noise monitoring was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring..





No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

## 8.2 Summary of Environmental Complaints, Notifications of Summons and Successful Prosecutions

A complaint received on 17 October 2008 through email by the RE was from the owner of House 14 on 15 October 2008 about noise generated from the concrete pavement breaking works carried out at the adjacent to the house in the morning of that day.

After the discussion of the complaint in SSEMC meeting with the RE, ET and Kaden on 17 October 2008, it concluded that the complaint was valid and due to the works. Refer to the EM&A Manual, more mitigation measures was required to be taken by Kaden immediately to minimize noise nuisance to the public.

During the complaint investigation hold by RE, IEC, ET and Kaden on 20 October 2008, no concrete breaking work was observed near House 14 and no other noise impact was noted generated from the construction activities. However, RE, IEC and ET still reminded Kaden to provide appropriate mitigation measures, such as using noise barrier and well planning in works schedule, to minimize noise nuisance to the public. Kaden agreed to rearrange the time such as working in the afternoon for the concrete breaking works and provide movable barriers for the concrete breaking works in order to minimize noise nuisance.

No complaint was received subsequent to the implementation of mitigation measures by Kaden. Hence, it was believed that Kaden have provided appropriate measures to mitigate the problem.

No notifications of summons and successful prosecutions were received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given Table 8.1.

Table 8.1 Statistical Summary of Environmental Complaint-log

Reporting Period	Complaint logged		Summons served		Successful Prosecution	
	Frequency	Cumulative	Frequency	Cumulative	Frequency	Cumulative
June 2008	0	0	0	0	0	0
July 2008	0	0	0	0	0	0
August 2008	0	0	0	0	0	0
September 2008	0	0	0	0	0	0
October 2008	1	1	0	0	0	0

## 9.0 IMPLEMENTATION STATUS

### 9.1 Implementation Status of Environmental Mitigation Measures

Kaden has been implementing the required environmental mitigation measures indicating in Appendix A of the EM&A manual. A summary of the implementation status of the mitigation measures is presented in Appendix F.

### 9.2 Implementation Status of Event and Action Plan

One exceedance of Action Level on noise monitoring was recorded in this reporting month since one complaint on noise issue was received on 15 October 2008. Follow up actions have been taken according to Section 11.3 of the EM&A Manual.

There were no exceedances of Action and Limit level on dust monitoring recorded in this reporting month and hence no further actions were required to be taken.

### 9.3 Implementation Status of Environmental Complaint Handling

One complaint was received in this reporting month. Details of the complaint are presented in Section 8.2.



#### **9.4 Implementation Status of Notification of Summons and Prosecution**

There were no notifications of summons respect to environmental issues registered in this reporting month.

#### **10.0 CONCLUSION AND DISCUSSION**

According to the summary of air quality monitoring results, no exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting period.

Besides, no Day-time noise level measured at all monitoring stations exceeded the Action and Limit Level in the reporting period. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during these periods.

According to the ET weekly site inspections carried out in this reporting month, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. Summary of the site inspection findings is shown in Table 5.1.

A complaint received on 17 October 2008 through email by the RE was from the owner of House 14 on 15 October 2008 about noise generated from the concrete pavement breaking works carried out at the adjacent to the house in the morning of that day.

After the discussion of the complaint in SSEMC meeting with the RE, ET and Kaden on 17 October 2008, it concluded that the complaint was valid and due to the works. Refer to the EM&A Manual, more mitigation measures was required to be taken by Kaden immediately to minimize noise nuisance to the public.

During the complaint investigation hold by RE, IEC, ET and Kaden on 20 October 2008, no concrete breaking work was observed near House 14 and no other noise impact was noted generated from the construction activities. However, RE, IEC and ET still reminded Kaden to provide appropriate mitigation measures, such as using noise barrier and well planning in works schedule, to minimize noise nuisance to the public. Kaden agreed to rearrange the time such as working in the afternoon for the concrete breaking works and provide movable barriers for the concrete breaking works in order to minimize noise nuisance.

No complaint was received subsequent to the implementation of mitigation measures by Kaden. Hence, it was believed that Kaden have provided appropriate measures to mitigate the problem.

No notifications of summons and successful prosecutions were received in this reporting period.

The monitored environmental results indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental measures had been effective in controlling potential impacts to within acceptable sensitive receivers.

#### **11.0 FUTURE KEY ISSUES**

##### **11.1 Upcoming Environmental Monitoring Schedule in coming monitoring month**

Proposed Environmental Monitoring program in coming month is presented as following table:



Table 11.1 Proposed Environmental Monitoring Schedule in coming month

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1/11
2	3	4	5 1-hr TSP x 3 24-hr TSP NM Weekly SI	6	7	8
9	10	11 1-hr TSP x 3 24-hr TSP NM Weekly SI	12	13	14	15
16	17 1-hr TSP x 3 24-hr TSP NM Weekly SI	18	19	20	21 1-hr TSP x 3 24-hr TSP	22
23 / 30	24	25	26	27 1-hr TSP x 3 24-hr TSP NM Weekly SI	28	29

### 11.2 Upcoming Construction Works Schedule in coming month

Major construction works planned to be carried out in coming month are shown as below:

- Excavation work for installation of sewer pipe
- Construction of manhole

### 11.3 Environmental Issues for the Coming Month

**Key issues to be considered in the coming month include:**

- Dust generated from the construction activities; and
- Noise generated from the noisy activities.

**Mitigation measures to be required in the coming month:**

#### Air Quality Impact

- To provide adequate water spraying on roads and working platform;
- To ensure implementation of the dust mitigation measures for the construction activities; and
- To provide proper maintenance for vehicles and machines on site.

#### Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site; and
- To re-schedule the work activities in the event of valid noise exceedance.



## **Appendix A**

### **Organization Chart and Lines of Communication**

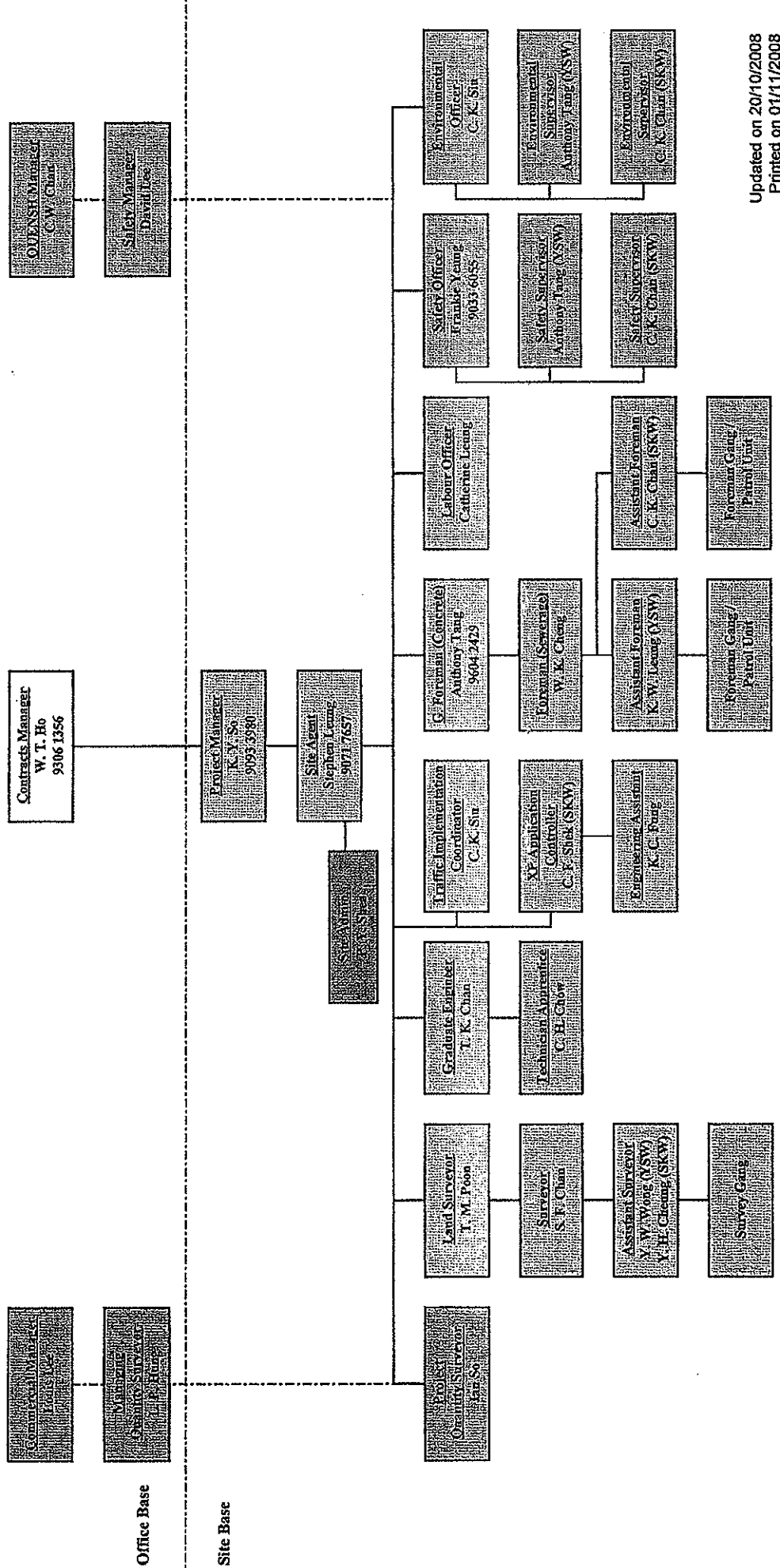


# Kaden Construction Limited

DSD Contract No. DC/2007/18

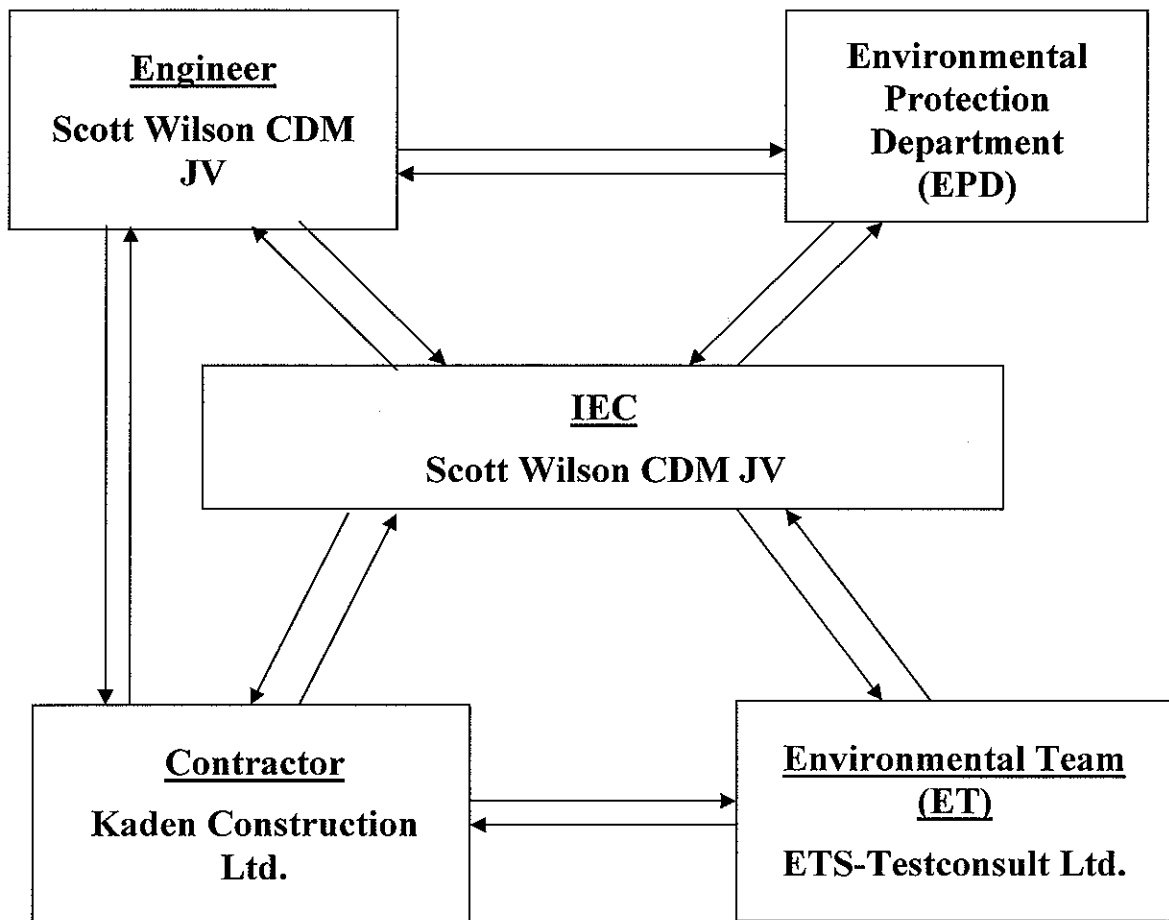
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works

Project Organisation Chart (Rev. E)





# Lines of Communication





## **Appendix B1**

### **Calibration Certificates for Impact Air Quality Monitoring Equipments**



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

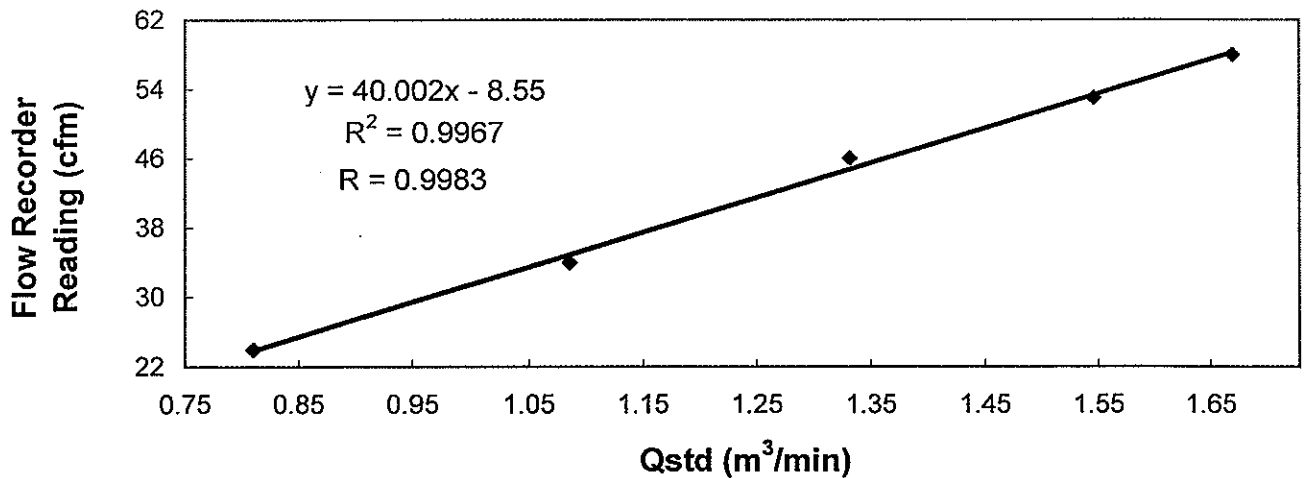
**Calibration Report  
of  
High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 12 August 2008  
Serial No. : 1173 (ET/EA/003/17) Calibration Due Date : 11 October 2008  
Method : Based on Operation Manual to perform 5-point calibration by using calibration kit  
Tisch TE-5025 A

Results :


Flow recorder reading (cfm)	58	53	46	34	24
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.67	1.55	1.33	1.09	0.81
Pressure :	753 mm Hg		Temp. :	298 K	

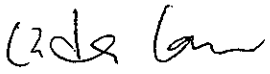
**Sampler 1173 Calibration Curve  
Site: Sok Kwu Wan (AM-1)  
Date of Calibration: 12 August 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)





東業德勤測試顧問有限公司  
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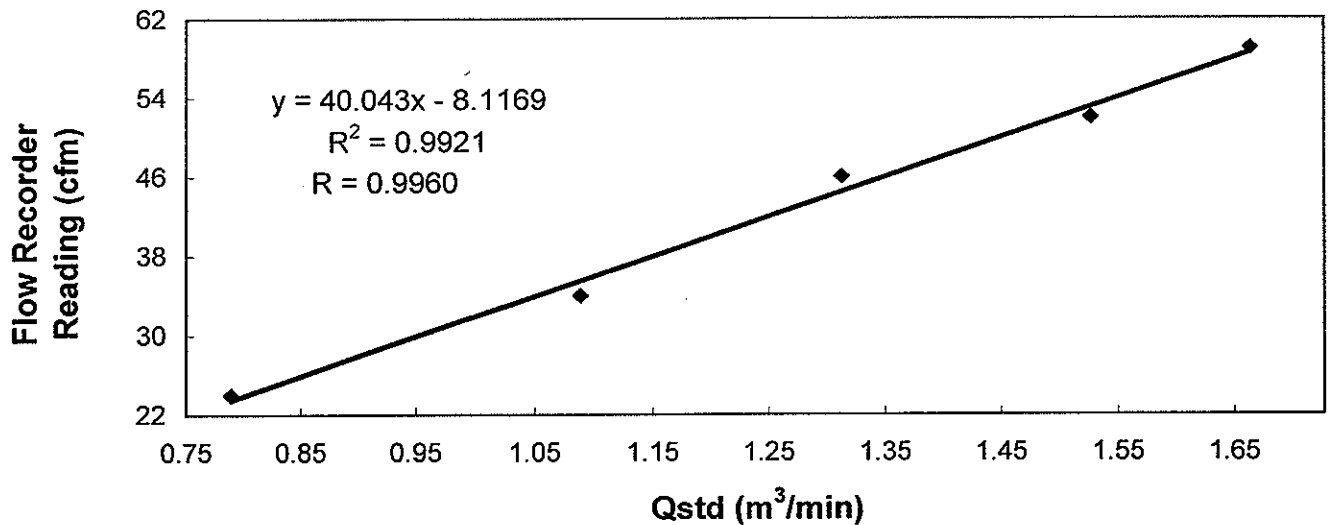
**TEST REPORT**

**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 14 October 2008  
**Serial No.** : 1173 (ET/EA/003/17) Calibration Due Date : 13 December 2008  
**Method** : Based on Operation Manual to perform 5-point calibration by using calibration kit  
Tisch TE-5025 A


<b>Results</b> :	Flow recorder reading (cfm)	59	52	46	34	24
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.66	1.53	1.31	1.09	0.79
	Pressure : 755 mm Hg	Temp. : 303 K				

**Sampler 1173 Calibration Curve  
Site: Sok Kwu Wan (AM-1)**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after 5-point calibration

The high volume sampler complies\* / does not comply\* with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



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**TEST REPORT**

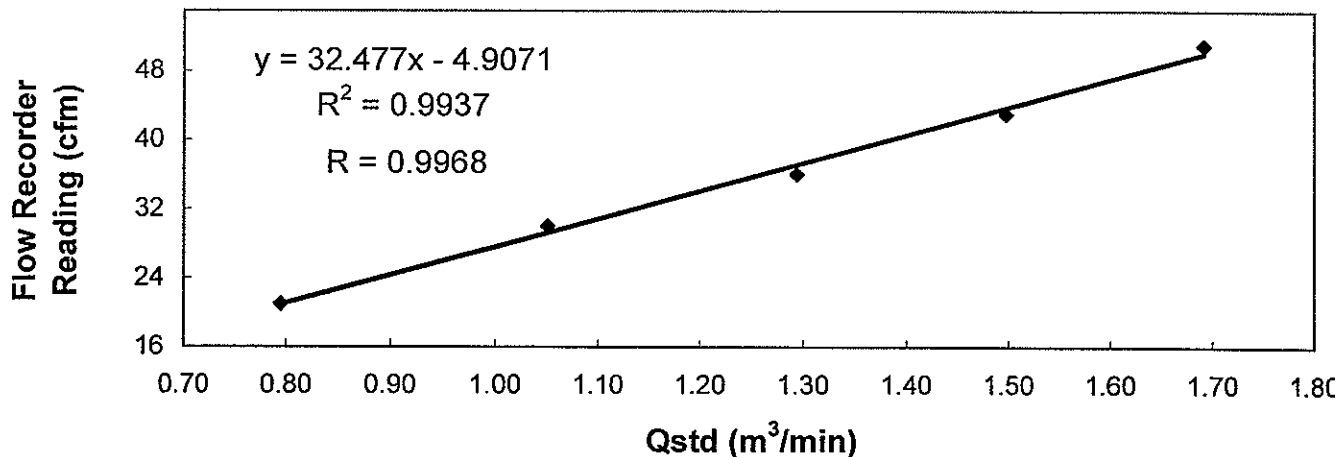
Calibration Report  
of  
High Volume Air Sampler

**Manufacturer** : Graseby GMW Date of Calibration : 12 August 2008  
**Serial No.** : 9865 (ET / EA / 003 / 14) Calibration Due Date : 11 October 2008  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

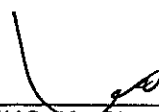
Flow recorder reading (cfm)	51	43	36	30	21
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.69	1.50	1.29	1.05	0.79
Pressure :	753 mm Hg		Temp. :	298 K	


**Sampler 9865 Calibration Curve**  
**Site: Sok Kwu Wan (AM-2)**  
**Date of Calibration: 12 August 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



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**TEST REPORT**

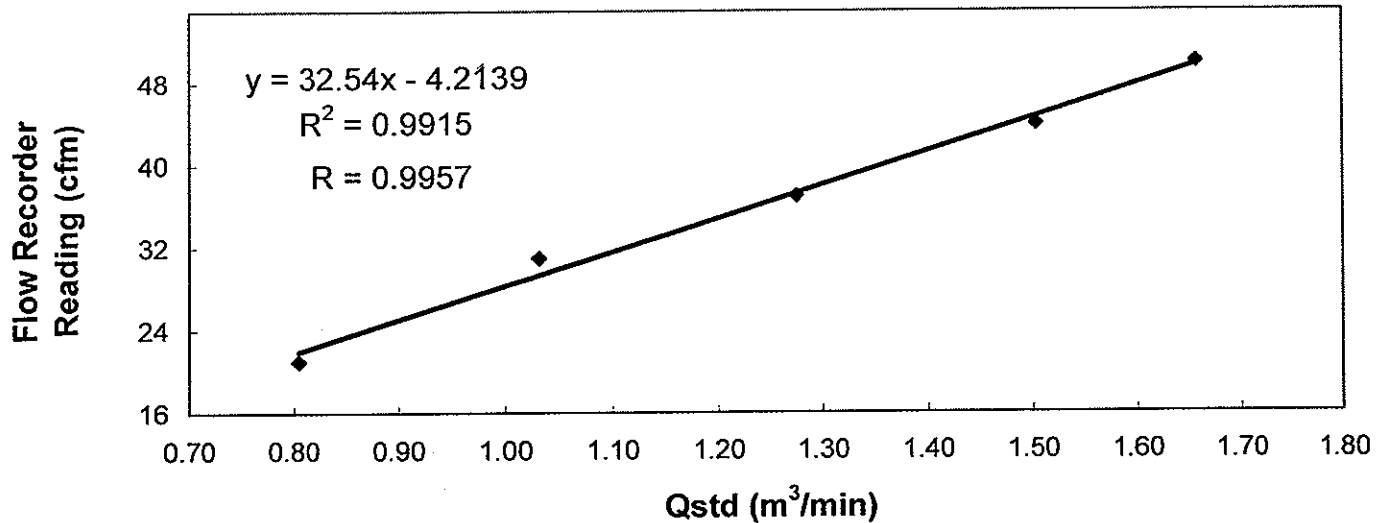
Calibration Report  
of  
High Volume Air Sampler

**Manufacturer** : Graseby GMW Date of Calibration : 14 October 2008  
**Serial No.** : 9865 (ET / EA / 003 / 14) Calibration Due Date : 13 December 2008  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :


Flow recorder reading (cfm)	50	44	37	31	21
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.66	1.50	1.27	1.03	0.80
Pressure :	755 mm Hg			Temp. :	303 K

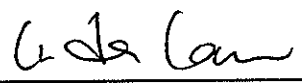
**Sampler 9865 Calibration Curve**  
Site: Sok Kwu Wan (AM-2)

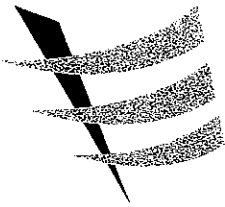


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :   
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(Assistant Environmental Officer)

Approved by :   
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(Senior Environmental Officer)



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**TEST REPORT**

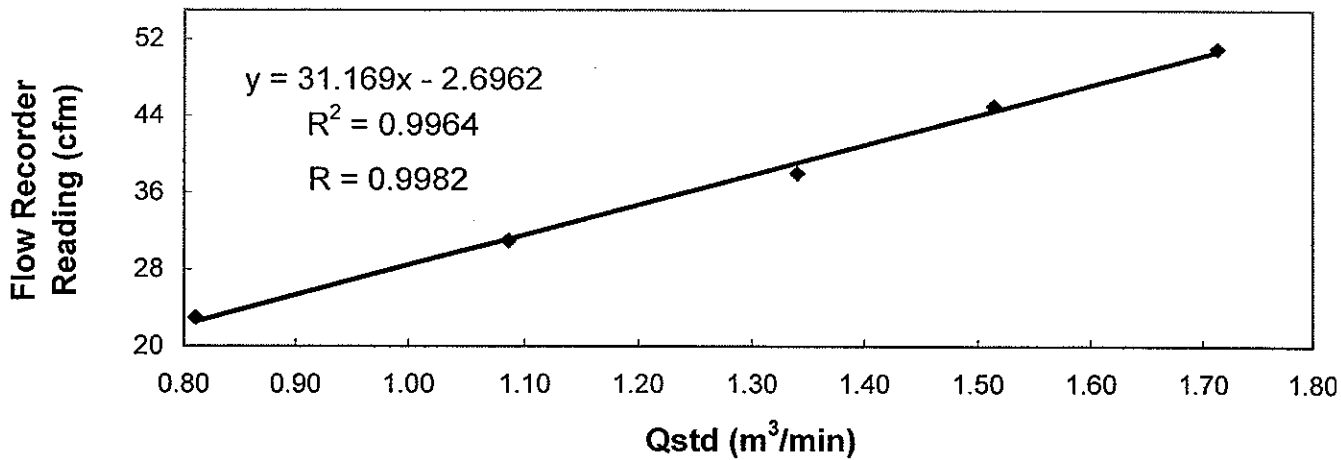
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 12 August 2008  
**Serial No.** : 9912 (ET / EA / 003 / 15) Calibration Due Date : 11 October 2008  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

Flow recorder reading (cfm)	51	45	38	31	23
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.71	1.51	1.34	1.09	0.81
Pressure :	753 mm Hg			Temp. :	298 K

**Sampler 9912 Calibration Curve  
Site: Sok Kwu Wan (AM-3)  
Date of Calibration: 12 August 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



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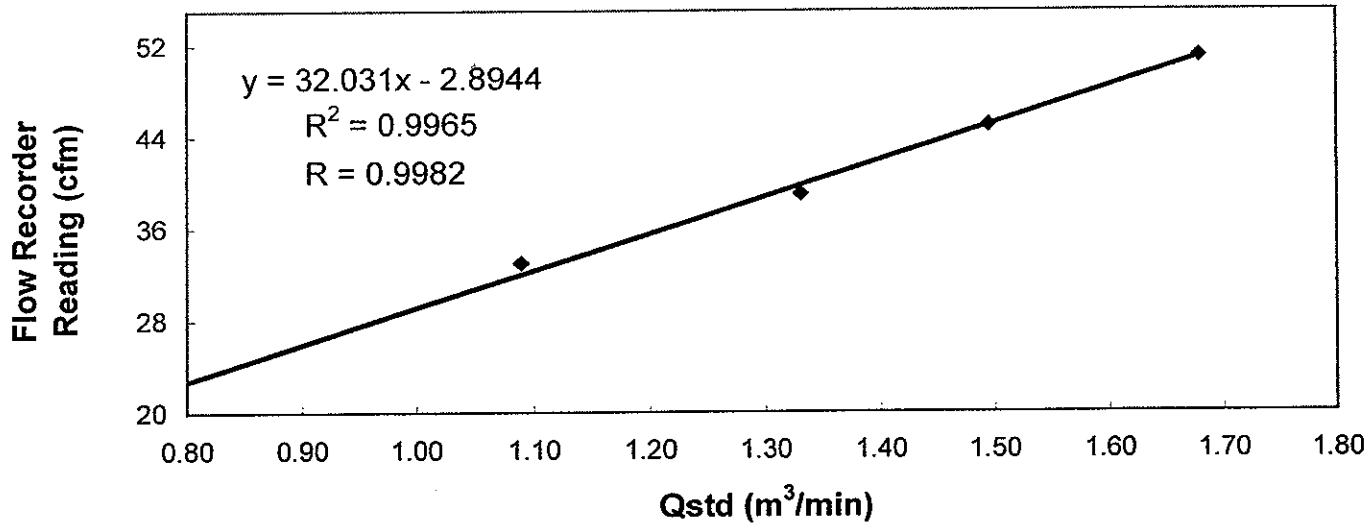
**TEST REPORT**

**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW **Date of Calibration** : 14 October 2008  
**Serial No.** : 9912 (ET/EA/003/15) **Calibration Due Date** : 13 December 2008  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

<b>Results</b> :	Flow recorder reading (cfm)	51	45	39	33	22
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.68	1.50	1.33	1.09	0.79
	Pressure :	755 mm Hg			Temp. :	303 K

**Sampler 9912 Calibration Curve  
Site: Sok Kwu Wan (AM-3)**

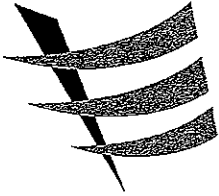


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / does not comply\* with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etf@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

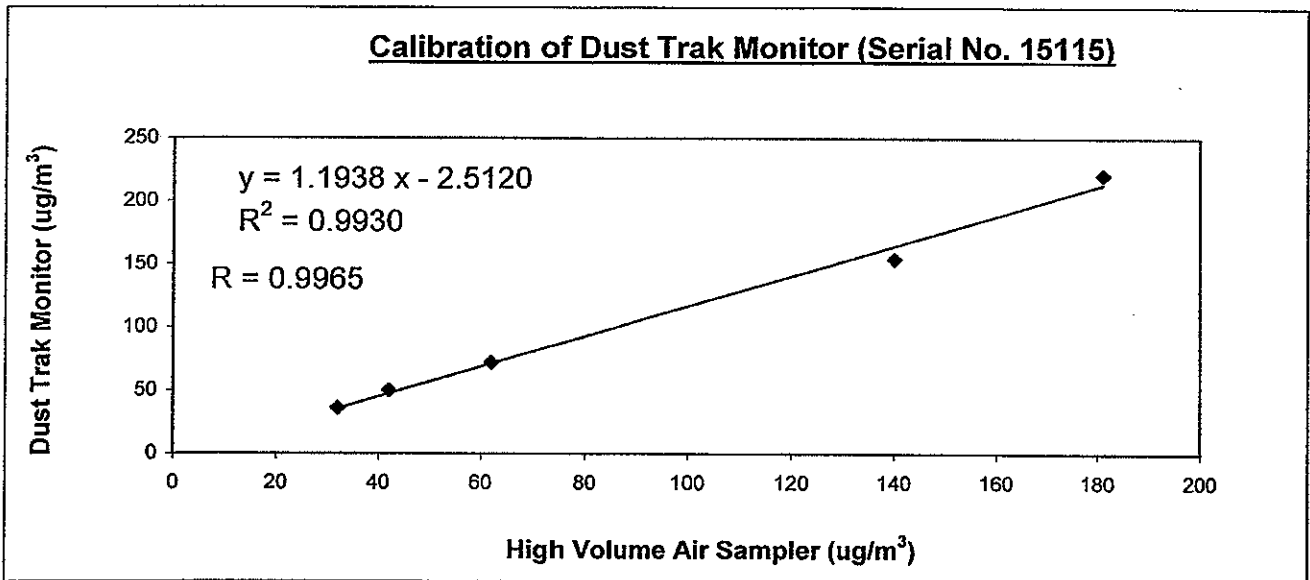
**TEST REPORT**

**Internal Calibration Report  
of  
Dust Trak Monitor**

Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 14 July 2008  
Serial No. : 15115 (ET/EA/001/02) Calibration Due Date : 13 January 2009  
Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition

Results :

Dust Trak Monitor (ug/m <sup>3</sup> )	36	50	72	154	221
High Volume Air Sampler (ug/m <sup>3</sup> )	32	42	62	140	181
Serail No of High Volume Air Samper : 1178			Calibration Date: 01 September 2008		




Acceptance Criteria :

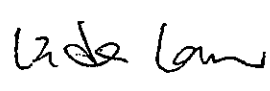
Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

**The Dust Trak Monitor complies \* / does-not-comply \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.**

Calibrated by :

  
LEUNG, Ka Ming  
(Assistant Environmental Officer)

Approved by :

  
LAW, Sau Yee  
(Senior Environmental Officer)



東業德勤測試顧問有限公司  
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8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
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Fax : 2695 3944 Web site : www.ets-testconsult.com

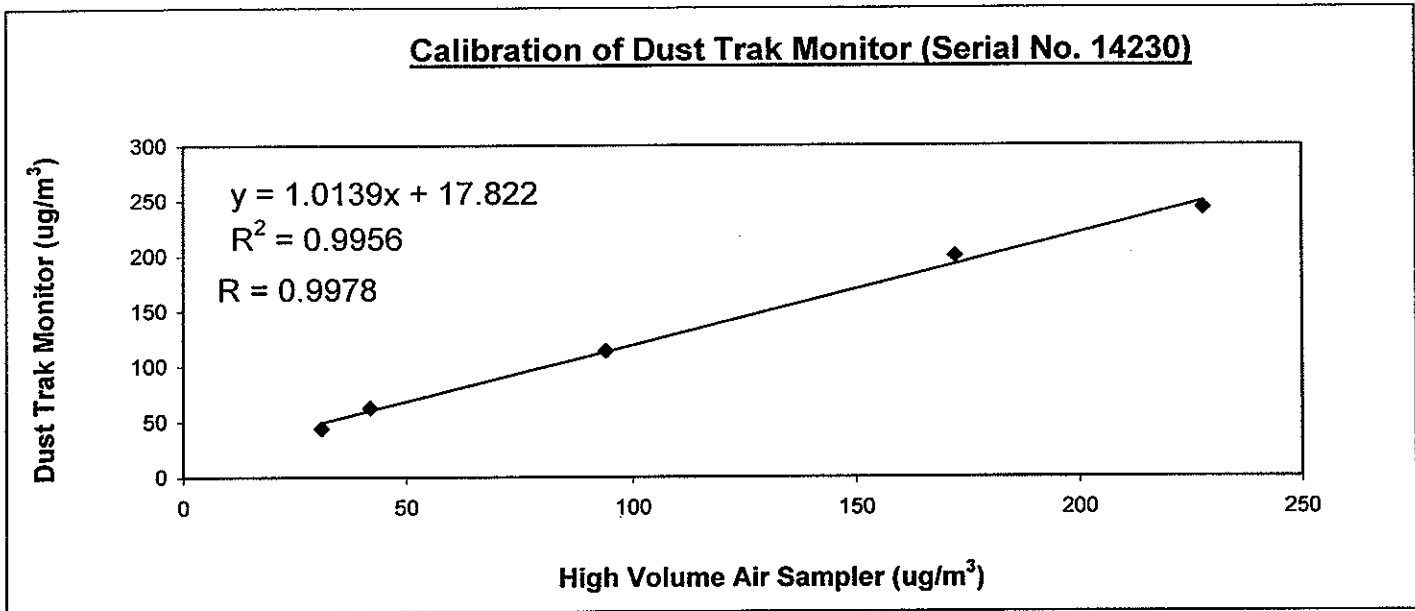
**TEST REPORT**

**Internal Calibration Report**  
of  
**Dust Trak Monitor**

Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 12 July 2008  
Serial No. : 14230 ( ET/EA/001/04 ) Due Date : 11 January 2009  
Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition


Results :


Dust Trak Monitor (ug/m <sup>3</sup> )	44	63	114	200	243
High Volume Air Sampler (ug/m <sup>3</sup> )	31	42	94	172	228
High Volume Air Sampler Serial No.: 1178			Calibration Due Date: 01 September 2008		



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies \* / does not comply \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELAND, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 14, 2008 Rootsometer S/N 9833620 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 1172 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3800	3.1	2.00
2	NA	NA	1.00	0.9650	6.3	4.00
3	NA	NA	1.00	0.8630	7.9	5.00
4	NA	NA	1.00	0.8230	8.6	5.50
5	NA	NA	1.00	0.6770	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9935	0.7199	1.4125	0.9958	0.7216	0.8866
0.9893	1.0252	1.9976	0.9916	1.0276	1.2538
0.9870	1.1437	2.2334	0.9894	1.1464	1.4018
0.9862	1.1983	2.3424	0.9885	1.2011	1.4703
0.9807	1.4486	2.8251	0.9830	1.4521	1.7732
Qstd slope (m) = 1.94106			Qa slope (m) = 1.21546		
intercept (b) = 0.01311			intercept (b) = 0.00823		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		

y axis =  $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

y axis =  $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(\text{Pa} - \text{Diff. Hg}) / 760] (298 / \text{Ta})$   
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(\text{Pa} - \text{Diff Hg}) / \text{Pa}]$   
 $Q_a = V_a / \text{Time}$

For subsequent flow rate calculations:

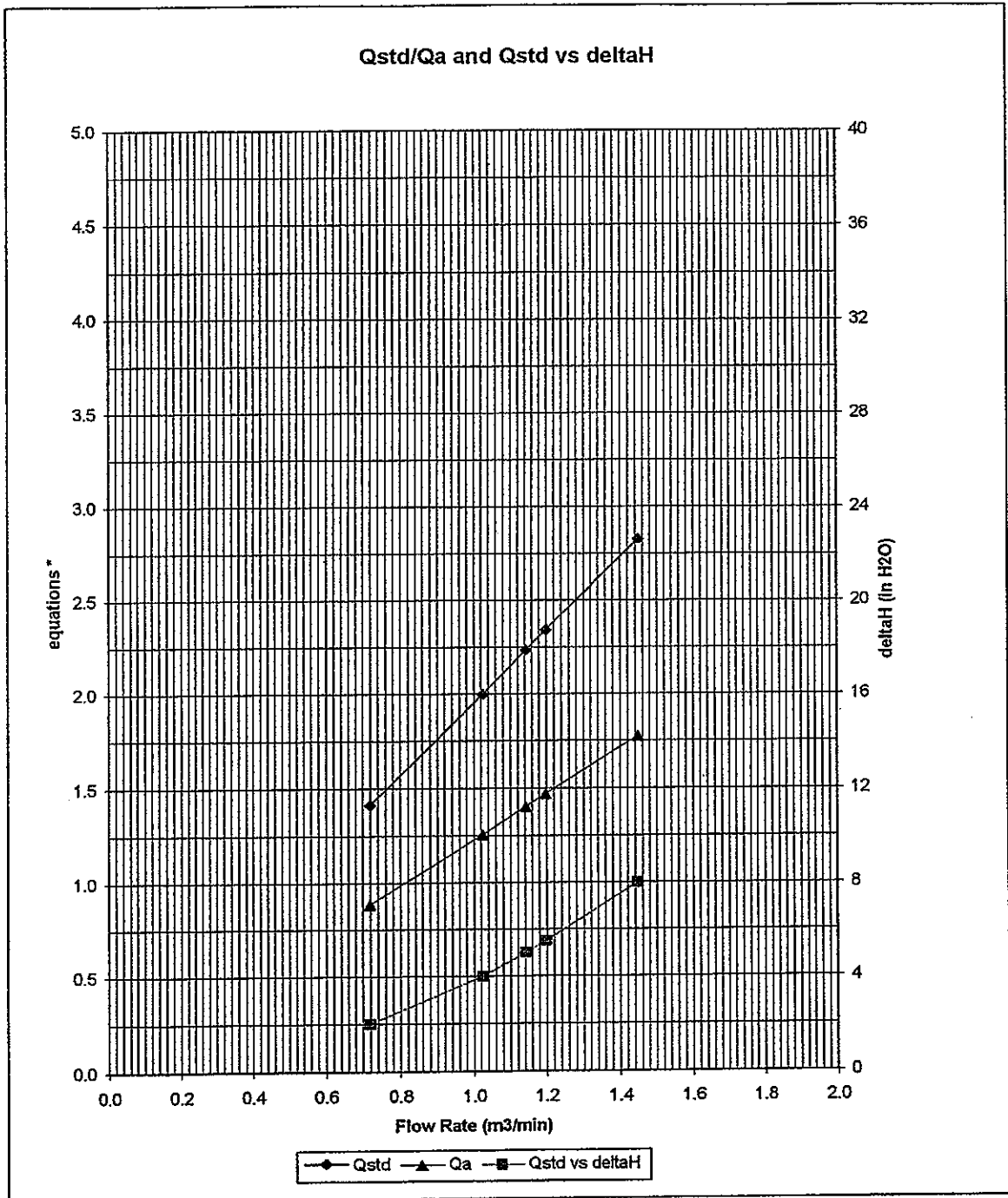
$Q_{std} = 1/m \{ [\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$   
 $Q_a = 1/m \{ [\text{SQRT} \text{H}_2\text{O}(\text{Ta}/\text{Pa})] - b \}$





TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
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 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT



\* y-axis equations:

Qstd series: 
$$\sqrt{\Delta H \left( \frac{P_a}{P_{std}} \right) \left( \frac{T_{std}}{T_a} \right)}$$

Qa series: 
$$\sqrt{(\Delta H (T_a / P_a))}$$

# 1172



## **Appendix B2**

### **Impact Air Quality Monitoring Results**

## Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1

Start Date	Start Time	Finish Date	Finish Time	Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
				Initial	Final		Initial	Final		Initial	Final		
02/10/08	12:46	03/10/08	12:47	13199.24	13223.25	24.01	1.0887	1.0887	1.0887	2.7415	2.8575	74	Fine
08/10/08	11:28	09/10/08	11:28	13223.25	12347.25	24.00	0.9387	0.9387	0.9387	2.7790	2.8498	52	Fine
14/10/08	13:20	15/10/08	13:20	13247.25	12371.25	24.00	1.1017	1.1017	1.1017	2.7847	2.8797	60	Fine
20/10/08	13:20	21/10/08	13:20	13271.25	13295.25	24.00	1.1017	1.1017	1.1017	2.7145	2.8466	83	Sunny
24/10/08	13:20	25/10/08	13:20	13295.25	13319.25	24.00	0.8021	0.8021	0.8021	2.7616	2.8365	65	Fine
30/10/08	13:20	31/10/08	13:20	13319.25	13343.25	24.00	0.9519	0.9519	0.9519	2.7471	2.8343	64	Fine

Monitoring Station : AM2

Start Date	Start Time	Finish Date	Finish Time	Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
				Initial	Final		Initial	Final		Initial	Final		
02/10/08	12:49	03/10/08	12:49	17235.01	17259.01	24.00	1.1980	1.1980	1.1980	2.7542	2.9020	86	Fine
08/10/08	11:19	09/10/08	11:20	17259.01	17283.02	24.01	1.1980	1.1980	1.1980	2.7839	2.8815	57	Fine
14/10/08	13:20	15/10/08	13:20	17283.02	17307.02	24.00	1.2666	1.2666	1.2666	2.7853	2.8891	57	Fine
20/10/08	13:20	21/10/08	13:20	17307.02	17331.02	24.00	1.2051	1.2051	1.2051	2.7518	2.8685	67	Sunny
24/10/08	13:20	25/10/08	13:20	17331.02	17355.02	24.00	1.0514	1.0514	1.0514	2.7501	2.8738	82	Fine
30/10/08	13:20	31/10/08	13:20	17355.02	17379.02	24.00	1.1744	1.1744	1.1744	2.7626	2.8628	59	Fine

Monitoring Station : AM3

Start Date	Start Time	Finish Date	Finish Time	Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )	Weather Condition
				Initial	Final		Initial	Final		Initial	Final		
02/10/08	13:03	03/10/08	13:03	1295.49	1319.49	24.00	1.3057	1.3057	1.3057	2.7891	3.0571	143	Fine
08/10/08	11:09	09/10/08	11:10	1319.49	1343.50	24.01	1.2415	1.2415	1.2415	2.7999	3.0278	127	Fine
14/10/08	16:20	15/10/08	16:20	1343.50	1367.50	24.00	1.3704	1.3704	1.3704	2.8035	2.9630	81	Fine
20/10/08	16:00	21/10/08	16:00	1367.50	1391.50	24.00	1.3704	1.3704	1.3704	2.7503	2.9015	77	Sunny
24/10/08	16:10	25/10/08	16:11	1391.50	1415.51	24.01	1.3704	1.3704	1.3704	2.7603	3.0749	159	Fine
30/10/08	16:10	31/10/08	16:10	1415.51	1439.51	24.00	1.2767	1.2767	1.2767	2.7469	2.9052	86	Fine

## Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/10/08	08:15	09:15	38	408	96	Fine
02/10/08	09:15	10:15	35	385	82	Fine
02/10/08	10:15	11:15	34	378	76	Fine
08/10/08	13:30	14:30	54	323	165	Cloudy
08/10/08	14:30	15:30	62	422	216	Cloudy
08/10/08	15:30	16:30	73	317	191	Cloudy
14/10/08	09:30	10:30	72	397	154	Sunny
14/10/08	10:30	11:30	68	406	144	Sunny
14/10/08	11:30	12:30	65	297	146	Sunny
20/10/08	09:11	10:11	79	472	157	Sunny
20/10/08	10:11	11:11	65	450	147	Sunny
20/10/08	11:11	12:11	73	414	131	Sunny
24/10/08	09:14	10:14	97	460	124	Fine
24/10/08	10:14	11:14	69	398	135	Fine
24/10/08	11:14	12:14	78	427	140	Fine
30/10/08	09:10	10:10	107	471	205	Fine
30/10/08	10:10	11:10	98	440	197	Fine
30/10/08	11:10	12:10	90	376	159	Fine

Monitoring Station : AM2

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/10/08	13:10	14:10	43	419	101	Fine
02/10/08	14:10	15:10	50	450	120	Fine
02/10/08	15:10	16:10	51	454	119	Fine
08/10/08	13:40	14:40	58	361	166	Cloudy
08/10/08	14:40	15:40	64	438	177	Cloudy
08/10/08	15:40	16:40	53	405	156	Cloudy
14/10/08	09:33	10:33	69	412	160	Sunny
14/10/08	10:33	11:33	70	390	150	Sunny
14/10/08	11:33	12:33	68	285	136	Sunny
20/10/08	09:13	10:13	78	397	156	Sunny
20/10/08	10:13	11:13	69	420	161	Sunny
20/10/08	11:13	12:13	60	430	129	Sunny
24/10/08	09:16	10:16	69	418	134	Fine
24/10/08	10:16	11:16	85	496	157	Fine
24/10/08	11:16	12:16	77	433	136	Fine
30/10/08	09:14	10:14	102	462	214	Fine
30/10/08	10:14	11:14	106	475	226	Fine
30/10/08	11:14	12:14	94	415	176	Fine

## Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM3

Date	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )			Weather
	Start	Finish	Minimum	Maximum	Average	
02/10/08	13:30	14:30	68	603	135	Fine
02/10/08	14:30	15:30	74	653	159	Fine
02/10/08	15:30	16:30	63	599	122	Fine
08/10/08	09:10	10:10	71	428	212	Cloudy
08/10/08	10:10	11:10	65	459	192	Cloudy
08/10/08	11:10	12:10	79	483	224	Cloudy
14/10/08	13:05	14:05	87	421	201	Sunny
14/10/08	14:05	15:05	90	406	186	Sunny
14/10/08	15:05	16:05	68	354	192	Sunny
20/10/08	13:00	14:00	82	562	170	Sunny
20/10/08	14:00	15:00	95	507	219	Sunny
20/10/08	15:00	16:00	90	492	185	Sunny
24/10/08	13:00	14:00	112	516	155	Fine
24/10/08	14:00	15:00	106	538	150	Fine
24/10/08	15:00	16:00	98	461	162	Fine
30/10/08	13:00	14:00	102	500	223	Fine
30/10/08	14:00	15:00	110	535	205	Fine
30/10/08	15:00	16:00	95	470	175	Fine

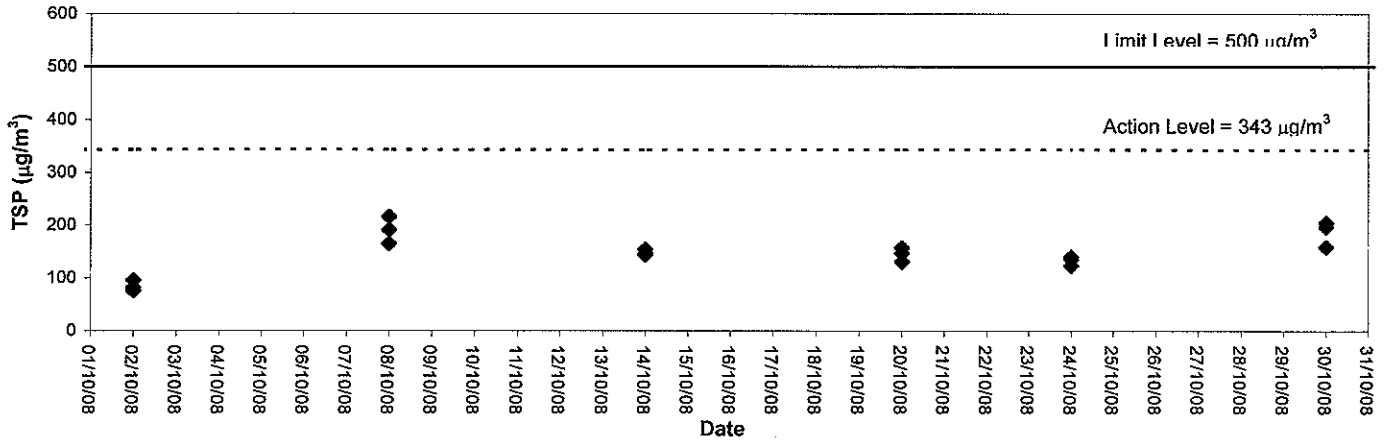


## **Appendix C3**

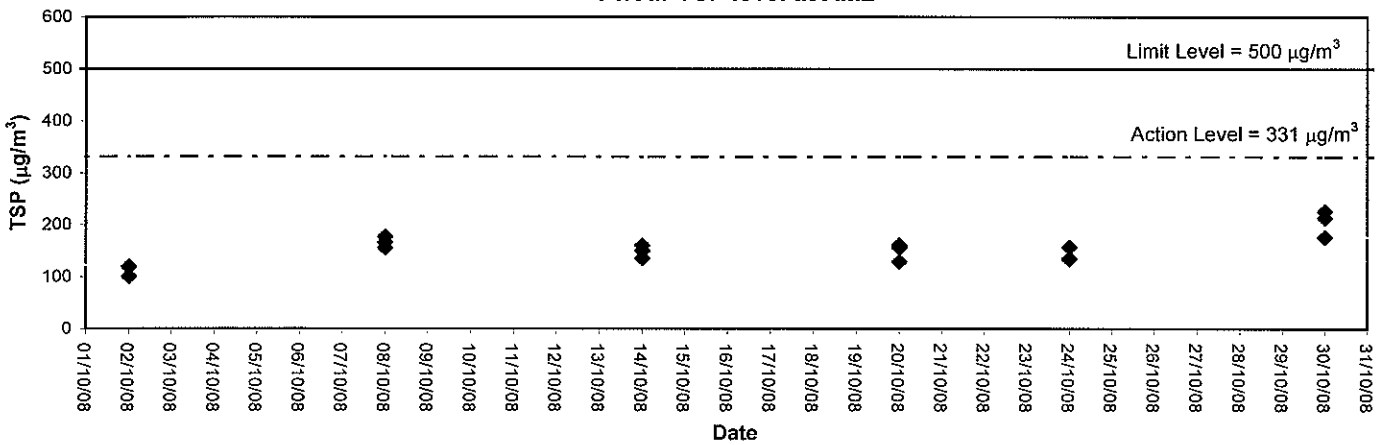
### **Graphical Plots of Impact Air Quality Monitoring Data**



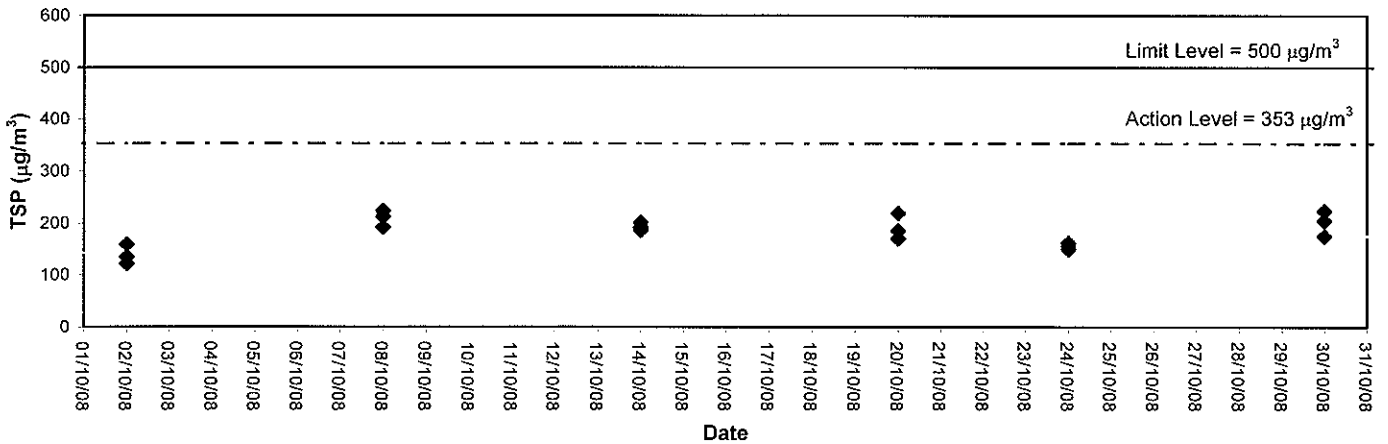
1-hour TSP level at AM1

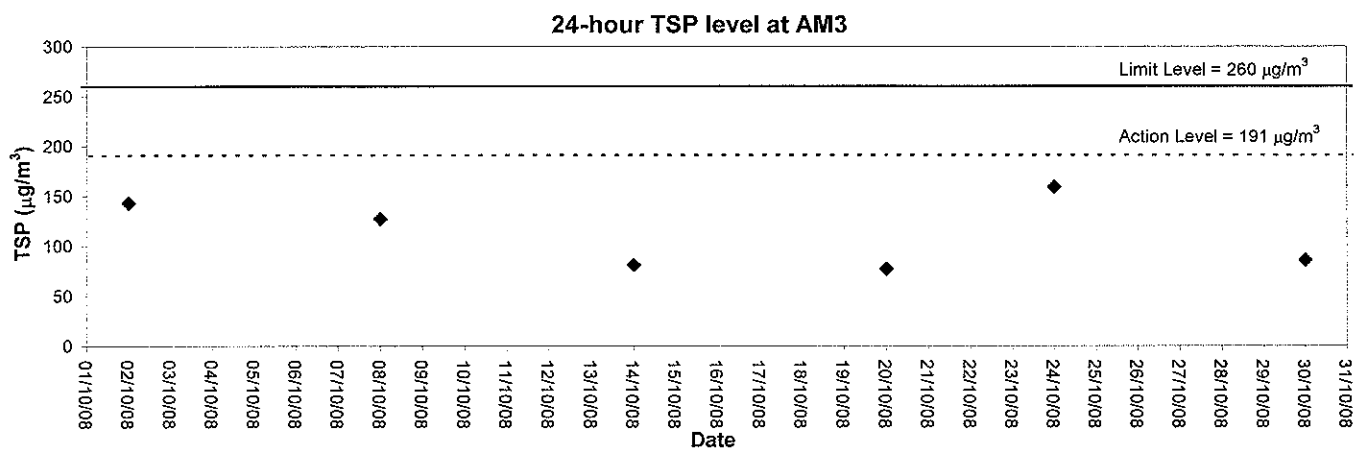
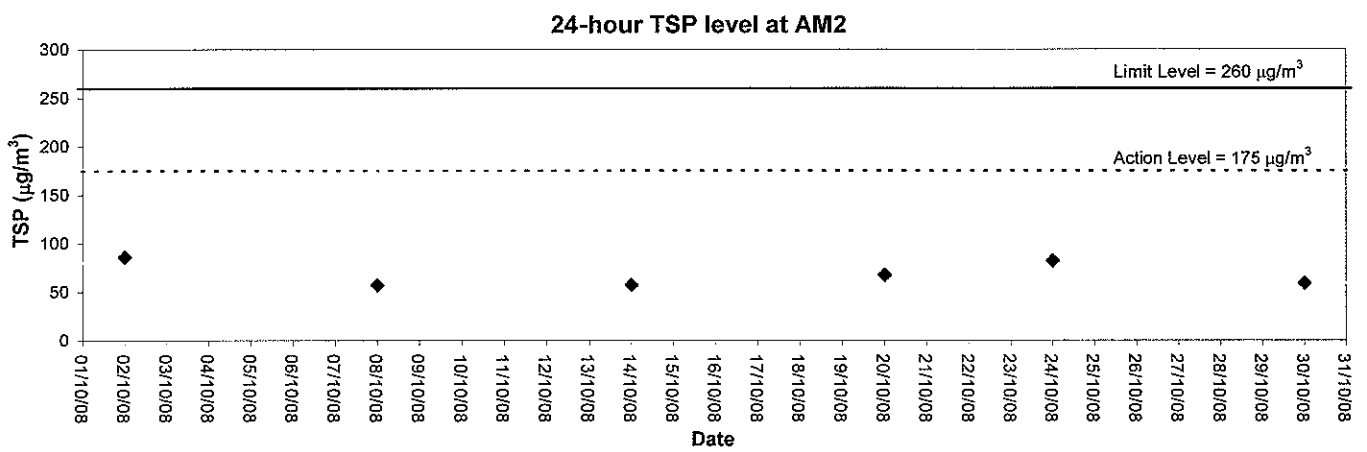
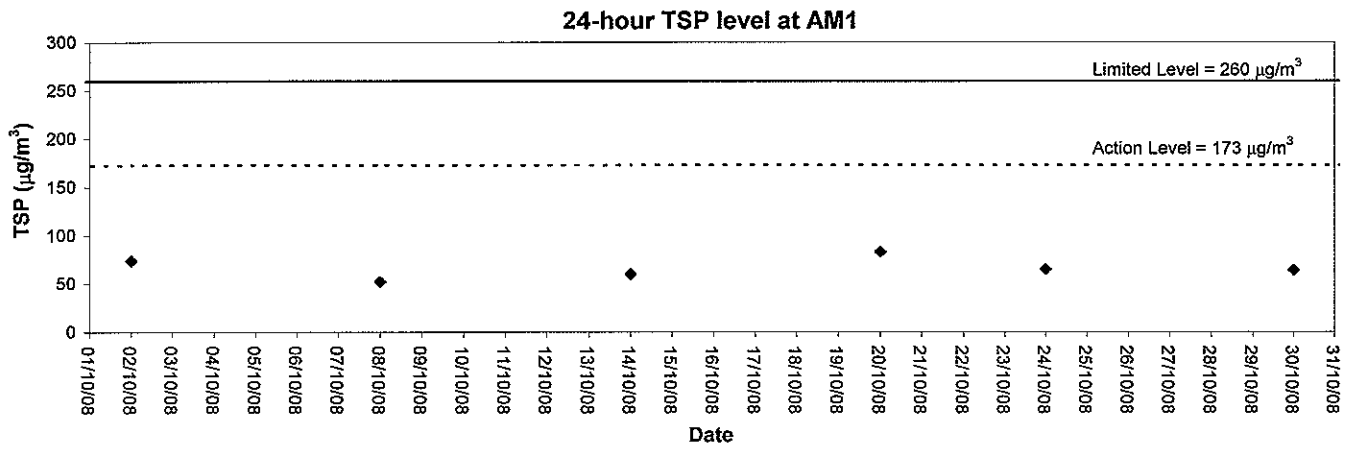


1-hour TSP level at AM2



1-hour TSP level at AM3









## **Appendix C1**

### **Calibration Certificates for Impact Noise Monitoring Equipments**



# Calibration Certificate

Certificate No. **81355**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q80566

**Date of receipt :** 1-Apr-08

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 3-Apr-08

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

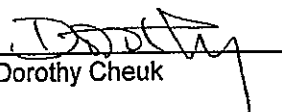
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	73602	7-Jul-08	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR
S041	Universal Counter	73453	22-Aug-08	SCL-HKSAR

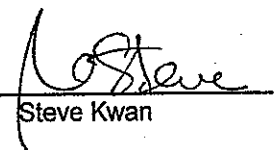
The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

Calibrated by :

  
Dorothy Cheuk

Approved by :

  
Steve Kwan

Date: 3-Apr-08

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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# Calibration Certificate

Certificate No. 81355

Page 2 of 2 Pages

Results :

**1. Level Accuracy (at 1 kHz)**

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.0 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.1$  dB

**2. Frequency Accuracy**

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.990 8 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

**3. Level Stability : 0.0 dB**

Uncertainty :  $\pm 0.01$  dB

**4. Total Harmonic Distortion :  $< 0.1$  %**

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values are the mean of 3 measurement.

4. Atmospheric Pressure : 1 005 hPa

----- END -----

**RION CO., LTD.**

3-20-41 Higashimotomachi Kokubunji Tokyo 185-8533  
Phone:042(359)7888, Facsimile:042(359)7442

**Certificate of Calibration**

**Name** : Precision sound level meter  
**Model** : NL-31 S/No. : 00773032  
**Microphone** : UC-53A S/No. : 313111  
**Preamplifier** : NH-21 S/No. : 25043

**Date of Calibration** : November, 27, 2007

We hereby certify that the above product was tested and calibrated according to the prescribed Rion procedures, and that it fulfills specification requirements.

The measuring equipment and reference devices used for testing and calibrating this unit are managed under the Rion traceability system and are traceable according to official Japanese standards and official standards of countries belonging to the International Committee of Weights and Measures.

  
**RION CO., LTD.**

Manager, Quality Control Department



## **Appendix C2**

### **Impact Noise Monitoring Results**



## Day-time Noise Monitoring

### Monitoring Station: NM1

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/10/08	Fine	13:15	13:45	54.4	57.3	50.2	0.5
08/10/08	Cloudy	13:45	14:15	52.7	56.4	49.8	1.4
14/10/08	Sunny	14:10	14:40	58.1	59.7	55.4	1.5
20/10/08	Sunny	15:10	15:40	60.5	62.1	57.4	0.2
30/10/08	Fine	14:35	15:05	58.1	60.6	55.0	0.4

### Monitoring Station: NM2

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/10/08	Fine	13:55	14:25	66.7	70.1	63.4	0.8
08/10/08	Cloudy	14:40	15:10	66.7	68.9	63.3	0.8
14/10/08	Sunny	13:20	13:50	61.8	62.8	55.7	1.7
20/10/08	Sunny	10:45	11:15	62.0	62.5	55.0	<0.1
30/10/08	Fine	11:00	11:30	62.5	64.9	55.3	0.2

### Monitoring Station: RNM3

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/10/08	Fine	14:38	15:08	57.4	61.4	54.8	0.7
08/10/08	Cloudy	10:15	10:45	63.8	69.2	60.7	0.6
14/10/08	Sunny	11:40	12:10	72.6	77.8	58.2	2.0
20/10/08	Sunny	11:19	11:49	74.7	77.0	66.7	0.8
30/10/08	Fine	13:48	14:18	64.9	66.3	58.7	0.4

Remark: 3dB(A) correction had been added to the results since noise measurements at RNM3 were free-field.

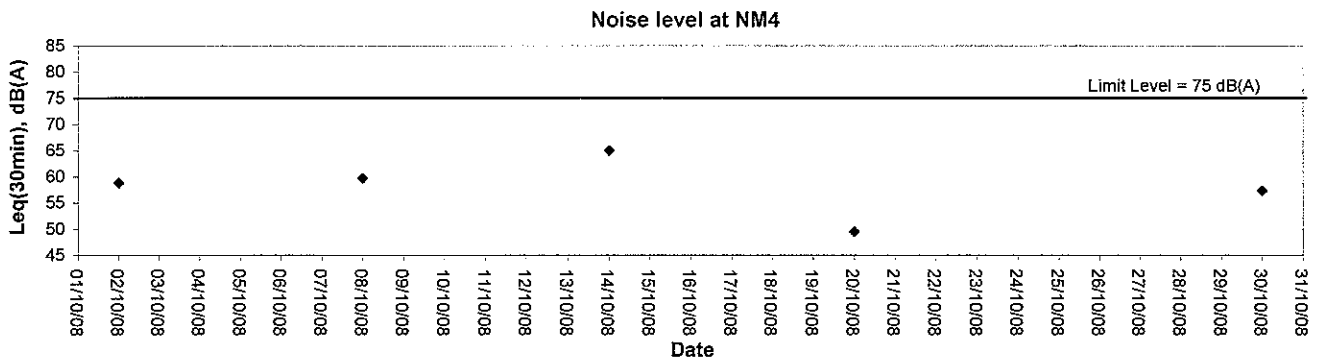
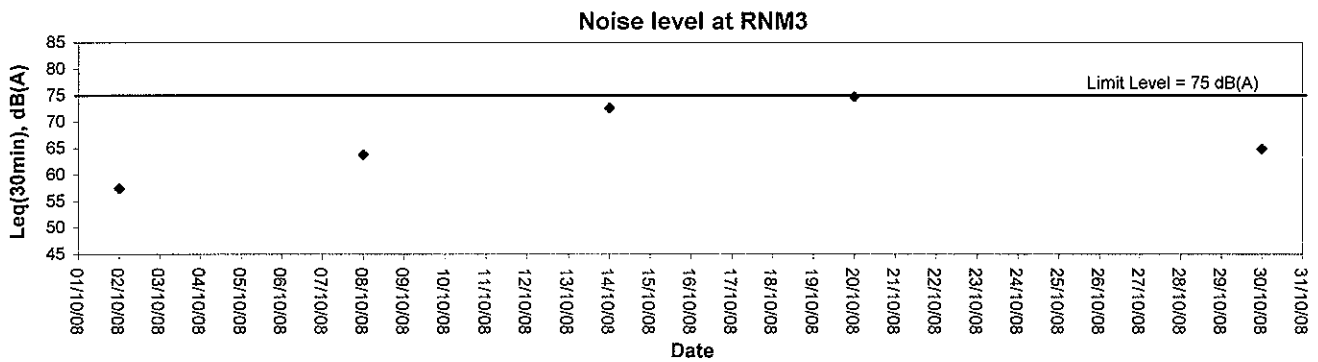
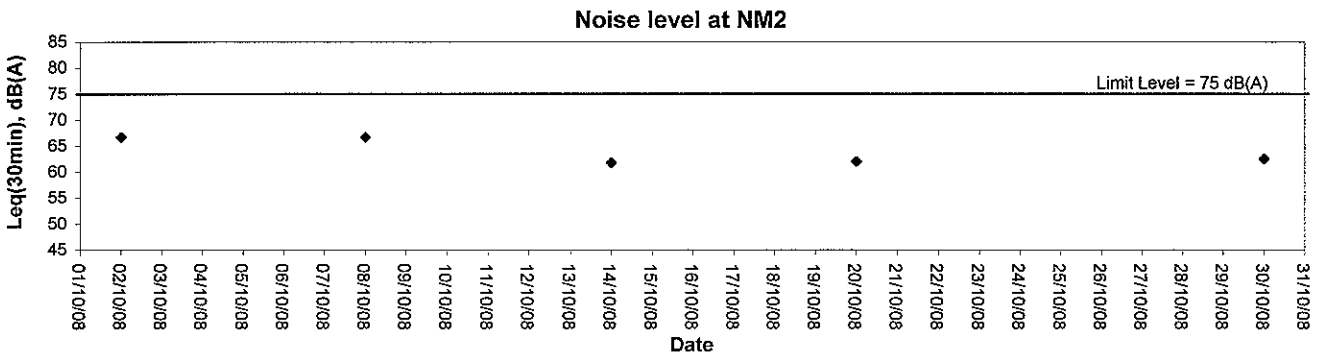
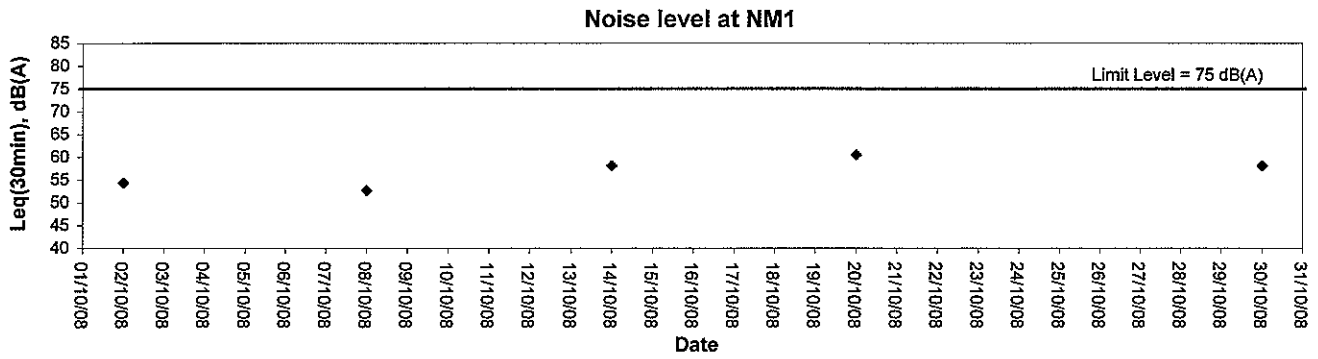
### Monitoring Station: NM4

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/10/08	Fine	15:20	15:50	58.8	61.4	55.6	0.5
08/10/08	Cloudy	09:30	10:00	59.7	63.3	54.8	1.7
14/10/08	Sunny	11:06	11:36	65.0	68.6	58.6	2.6
20/10/08	Sunny	13:50	14:20	49.5	51.4	43.5	0.2
30/10/08	Fine	13:08	13:38	57.3	60.8	52.9	0.4

## **Appendix C3**

### **Graphical Plots of Impact Noise Monitoring Data**

## Noise Monitoring (Day-time)





## **Appendix D**

### **Event-Action Plans**



### Event / Action Plan for Air Quality

EVENT	ACTION				CONTRACTOR
	ET	IC(E)	ER	ER	
<b>Action Level</b>					
Action Level being exceeded for one sample	<ol style="list-style-type: none"> <li>Identify source, investigate the causes of Exceedance and propose remedial measures;</li> <li>Inform IC(E) and ER;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>Rectify any unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ol>	
Action Level being exceeded for two or more consecutive samples	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Discuss with IC(E) and Contractor on remedial actions required;</li> <li>If exceedance continues, arrange meeting with IC(E) and ER;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Confirm receipt of notification of failure in writing;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Submit proposals for remedial actions to ER within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>	
<b>Limit Level</b>					
Limit Level being exceeded for one sample	<ol style="list-style-type: none"> <li>Identify source;</li> <li>Inform ER, Contractor and EPD;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>Checking monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on the possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial actions properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>	
Limit Level being exceeded for two or more consecutive samples	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Carry our analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with ER, ET and Contractor on the potential remedial actions;</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented;</li> <li>If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>	



**Event / Action Plan for Construction Noise**

EVENT	ACTION				CONTRACTOR
	ET	IC(E)	ER	ER	
<b>Action level</b>	<ol style="list-style-type: none"> <li>1. Notify IC(E) and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IC(E), ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures ;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review and investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure proper implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposal to IC(E);</li> <li>2. Implement noise mitigation proposals.</li> </ol>	
<b>Limit level</b>	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IC(E), ER, EPD and Contractor;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IC(E), ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions to ensure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Same as above;</li> <li>2. If exceedances continue, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IC(E);</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still out of control;</li> <li>5. Stop the relevant portion of works as determined by ER, until the exceedance is abated.</li> </ol>	



## **Appendix E**

### **Construction Programme**

**Project Key Date**

KD1000	Contract Date of Commencement	01 JAN 08	18 APR 10	31 JAN 08*	19 APR 10*	1d	Contract Date of Commencement	Contract Date of Completion
KD1040	Contract Date of Completion	0	0	0	0	1d		

**Works Order**

Works Order	Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Fiscal
KD1050	WO 005 - YSW Main St. & Clinic	0	26 FEB 08*	08 MAY 08	08 MAY 08	08 MAY 08	73d
KD1060	WO 006 - North of Police Post	0	26 FEB 08*	23 APR 08	23 APR 08	23 APR 08	57d
KD1070	WO 008 - Po Wah Yuen MHY21 and Its Upstream	0	16 JUN 08*	18 JUN 08	18 JUN 08	18 JUN 08	0
KD1080	WO 009 - PWY Y21-Y48 and Y83-Its Upstream	0	15 JUL 08*	15 JUL 08	15 JUL 08	15 JUL 08	0
KD1090	WO 010 - SKW 3rd St. Branches & CM S37-S50-S57	0	15 JUL 08*	08 OCT 08	08 OCT 08	08 OCT 08	73d
KD1100	WO 013 - SPOV Y291-Y284, Y289-Y305 Rescue Exc	0	18 AUG 08*	08 NOV 08	08 NOV 08	08 NOV 08	71d
KD1110	WO 014 - Y287-T300, Y165-Y177, Y179-Y187, Y259-Y272	0	18 AUG 08*	18 AUG 08	18 AUG 08	18 AUG 08	0
KD1120	WO 015 - Trenchless S36-S70	0	18 AUG 08*	01 SEP 08	01 SEP 08	01 SEP 08	12d
KD1130	WO 016 - Y86-Y112-Y228 + Branches & AC removal	0	01 SEP 08*	01 SEP 08	01 SEP 08	01 SEP 08	0

**Completion of Works Order**

Works Order	Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Fiscal
KD1051	WO 005 - Date of Completion	0	26 FEB 09	26 FEB 09	26 FEB 09*	26 FEB 09*	0
KD1061	WO 006 - Date of Completion	0	26 MAR 09	26 MAR 09	26 MAR 09*	26 MAR 09*	0
KD1071	WO 008 - Date of Completion	0	14 JAN 09	14 JAN 09	14 JAN 09*	14 JAN 09*	0
KD1081	WO 009 - Date of Completion	0	14 JUL 09	14 JUL 09	14 JUL 09*	14 JUL 09*	0
KD1091	WO 010 - Date of Completion	0	15 APR 09	14 JUL 09*	14 JUL 09*	14 JUL 09*	73d
KD1101	WO 013 - Date of Completion	0	04 MAR 09	17 AUG 09*	17 AUG 09*	17 AUG 09*	134d
KD1111	WO 014 - Date of Completion	0	17 AUG 09	17 AUG 09	17 AUG 09*	17 AUG 09*	0
KD1121	WO 015 - Date of Completion	0	27 NOV 09	31 DEC 09*	31 DEC 09*	31 DEC 09*	27d
KD1131	WO 016 - Date of Completion	0	30 JAN 10	31 JAN 10*	31 JAN 10*	31 JAN 10*	1d

**+General and Preparation**

336	30 JAN 08	02 MAR 09	11 APR 08	20 APR 10	342d
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**+Works by Utilities Undertakers**

32	06 NOV 08	13 DEC 08	05 DEC 08	12 JAN 09	24d
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**+Site Works at Works Area W1A/W1B/W2A/W2B**

51	03 MAR 08	30 APR 08	17 MAR 08	01 MAY 08*	1d
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**YUNGSHUE WAN**

**Sok Kwu Wan**

**Mo Tat Road**

Activity	Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Fiscal
S148-S165	Trenchless (WO 006)	2	05 JUN 08*	06 JUN 08	07 JUN 08	09 JUN 08	2d
MT4708	Implementation of TTA	14	10 JUN 08*	25 JUN 08	10 JUN 08	25 JUN 08	0
MT4710	Inspection Pit / Liaison with U/U/ UU Diversion	91	26 JUN 08	09 OCT 08	25 JUN 08	09 OCT 08	0
MT4720	S148-150	60	10 OCT 08	18 DEC 08	10 OCT 08	18 DEC 08	0
MT4730	S151-165	80	19 DEC 08	28 MAR 09	19 DEC 08	28 MAR 09*	0
MT4739	Inspection Pit / Liaison with U/U/ UU Diversion	21	23 APR 08	16 MAY 08	23 APR 08	16 MAY 08	0
MT4740	S152-153	10	17 MAY 08	28 MAY 08	17 MAY 08	28 MAY 08	0
MT4750	S157-158	8	29 MAY 08	06 JUN 08	29 MAY 08	06 JUN 08	0
MT4760	S158-159	7	07 JUN 08	14 JUN 08	07 JUN 08	14 JUN 08	0
MT4770	S159-160	7	16 JUN 08	23 JUN 08	16 JUN 08	23 JUN 08	0
MT4780	S160-161	7	24 JUN 08	01 JUL 08	24 JUN 08	01 JUL 08	0

Start Date 31 JAN 08	Progress point	▲	Early start point	△	Summary bar	▬	Critical bar	▬	Summary bar	▬
Finish Date 19 APR 10	Critical point	▲	Early finish point	△	Summary bar	▬	Critical bar	▬	Summary bar	▬
	Start milestone point	◆	Progress bar	▬	Critical bar	▬	Summary bar	▬	Summary bar	▬
	Finish milestone point	◆	Critical bar	▬	Summary bar	▬	Summary bar	▬	Summary bar	▬

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Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	2009	2010
MT4790	S161-162 (RFI 013)	7	02 JUL 08	09 JUL 08	02 JUL 08	09 JUL 08	0		
MT4800	S162 to NOTS(2)	13	10 JUL 08	24 JUL 08	23 FEB 09	09 MAR 09	191d		
MT4810	S163 to NOTS(2)	15	25 JUL 08	11 AUG 08	10 MAR 09	26 MAR 09	191d		
<b>SKW 1st/2nd/3rd St</b>									
<b>S132-S140 (WO 006)</b>									
SS4818	Inspection PR / Liaison with U/U / UJ Diversion	60	23 APR 08	01 JUL 08	01 MAY 08	09 JUL 08	7d		
SS4820	S132-133	30	10 JUL 08	13 AUG 08	10 JUL 08	13 AUG 08	0		
SS4830	S133-134	30	14 AUG 08	17 SEP 08	14 AUG 08	17 SEP 08	0		
SS4840	S134-135	30	18 SEP 08	22 OCT 08	18 SEP 08	22 OCT 08	0		
SS4850	S135-140	30	23 OCT 08	26 NOV 08	23 OCT 08	26 NOV 08	0		
SS4860	S136-138	30	27 NOV 08	31 DEC 08	27 NOV 08	31 DEC 08	0		
SS4870	S137-139	27	02 JAN 09	05 FEB 09	02 JAN 09	05 FEB 09	0		
SS4880	S138-139	21	06 FEB 09	02 MAR 09	06 FEB 09	02 MAR 09	0		
SS4890	S139-140	21	03 MAR 09	26 MAR 09	03 MAR 09	26 MAR 09	0		
<b>S140-S148 (WO 006)</b>									
SS4899	Inspection PR / Liaison with U/U / UJ Diversion	55	23 APR 08	25 JUN 08	23 APR 08	25 JUN 08	0		
SS4900	S140-141	30	26 JUN 08	30 JUL 08	26 JUN 08	30 JUL 08	0		
SS4910	S141-142	30	31 JUL 08	03 SEP 08	31 JUL 08	03 SEP 08	0		
SS4920	S142-143	30	04 SEP 08	08 OCT 08	04 SEP 08	08 OCT 08	0		
SS4930	S143-144	30	09 OCT 08	12 NOV 08	09 OCT 08	12 NOV 08	0		
SS4940	S144-146	30	13 NOV 08	17 DEC 08	13 NOV 08	17 DEC 08	0		
SS4950	S145-146	30	18 DEC 08	22 JAN 09	18 DEC 08	22 JAN 09	0		
SS4960	S146-147	30	23 JAN 09	02 MAR 09	23 JAN 09	02 MAR 09	0		
SS4970	S147-148	21	03 MAR 09	26 MAR 09	03 MAR 09	26 MAR 09	0		
<b>S110-S132, S127-S132</b>									
SS4978	Inspection PR / Liaison with U/U / UJ Diversion	30	16 APR 09	22 MAY 09	10 AUG 09	12 SEP 09	95d		
SS4980	S110-111	14	23 MAY 09	10 JUN 09	14 SEP 09	28 SEP 09	95d		
SS4990	S111-113	14	11 JUN 09	26 JUN 09	30 SEP 09	17 OCT 09	95d		
SS5010	S113-114	14	27 JUN 09	13 JUL 09	19 OCT 09	04 NOV 09	95d		
SS5020	S114-123	14	14 JUL 09	29 JUL 09	05 NOV 09	20 NOV 09	95d		
SS5030	S123-124	14	30 JUL 09	14 AUG 09	21 NOV 09	07 DEC 09	95d		
SS5040	S124-125	14	15 AUG 09	31 AUG 09	08 DEC 09	23 DEC 09	95d		
SS5050	S125-132	14	01 SEP 09	16 SEP 09	24 DEC 09	11 JAN 10	95d		
SS5060	S126-128	14	17 SEP 09	05 OCT 09	12 JAN 10	27 JAN 10	95d		
SS5070	S127-128	14	06 OCT 09	21 OCT 09	28 JAN 10	12 FEB 10	95d		
SS5080	S128-131	14	22 OCT 09	07 NOV 09	13 FEB 10	01 MAR 10	95d		
SS5090	S129-130	14	09 NOV 09	24 NOV 09	02 MAR 10	17 MAR 10	95d		
SS5100	S130-131	14	25 NOV 09	10 DEC 09	18 MAR 10	02 APR 10	95d		
SS5110	S131-132	14	11 DEC 09	29 DEC 09	03 APR 10	19 APR 10	95d		
<b>S107-S110, S115-S123, S112-S113 (WO 010)</b>									
SS5119	Inspection PR / Liaison with U/U / UJ Diversion	60	15 JUL 08	22 SEP 08	08 OCT 08	16 DEC 08	73d		
SS5120	S107-108	14	23 SEP 08	08 OCT 08	17 DEC 08	02 JAN 09	73d		
SS5130	S108-109	14	09 OCT 08	24 OCT 08	03 JAN 09	19 JAN 09	73d		
SS5140	S109-110	14	25 OCT 08	10 NOV 08	20 JAN 09	07 FEB 09	73d		
SS5150	S115-117	14	11 NOV 08	26 NOV 08	09 FEB 09	24 FEB 09	73d		
SS5160	S116-117	14	27 NOV 08	12 DEC 08	25 FEB 09	12 MAR 09	73d		
SS5170	S117-118	14	13 DEC 08	29 DEC 08	13 MAR 09	28 MAR 09	73d		
SS5180	S118-119	14	30 DEC 08	15 JAN 09	30 MAR 09	18 APR 09	73d		
SS5190	S119-120	14	16 JAN 09	04 FEB 09	20 APR 09	07 MAY 09	73d		
SS5200	S120-121	14	05 FEB 09	20 FEB 09	08 MAY 09	23 MAY 09	73d		

Start Date 31 JAN 08 Finish Date 19 APR 10		Progress point Critical point Summary point Start milestone point Finish milestone point	DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works Project Programme Rev. 3		Revision 0 Revision 1 Revision 2 Revision 3	Checked Approved KYS KYS KYS KC
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Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
CM5590	S11-12	12	31 AUG 08	12 SEP 09	21 JAN 10	03 FEB 10	118d
CM5600	S12-13	12	14 SEP 09	28 SEP 09	04 FEB 10	17 FEB 10	118d
CM5610	S13-14	12	28 SEP 09	13 OCT 09	18 FEB 10	03 MAR 10	118d
CM5620	S14-15	12	14 OCT 09	28 OCT 09	04 MAR 10	17 MAR 10	118d
CM5630	S15-36	12	29 OCT 09	11 NOV 09	18 MAR 10	31 MAR 10	118d
<b>S16-S36</b>							
CM5539	Inspection Pit / Liaison with UJ/ UU Diversion	60	15 SEP 08	22 NOV 08	07 JAN 09	20 MAR 09	97d
CM5540	S16-175	14	24 NOV 08	09 DEC 08	21 MAR 09	07 APR 09	97d
CM5550	S175-17	14	10 DEC 08	25 DEC 08	08 APR 09	27 APR 09	97d
CM5560	S17-18	14	26 DEC 08	12 JAN 09	28 APR 09	15 MAY 09	97d
CM5570	S18-19	14	13 JAN 09	02 FEB 09	16 MAY 09	04 JUN 09	97d
CM5580	S19-20	14	03 FEB 09	18 FEB 09	05 JUN 09	20 JUN 09	97d
CM5590	S20-21	14	19 FEB 09	06 MAR 09	22 JUN 09	07 JUL 09	97d
CM5700	S21-22	14	07 MAR 09	23 MAR 09	08 JUL 09	23 JUL 09	97d
CM5710	S22-23	14	24 MAR 09	09 APR 09	24 JUL 09	08 AUG 09	97d
CM5720	S23-24	14	14 APR 09	29 APR 09	10 AUG 09	25 AUG 09	97d
CM5730	S24-25	14	30 APR 09	18 MAY 09	26 AUG 09	10 SEP 09	97d
CM5740	S25-28	14	19 MAY 09	05 JUN 09	11 SEP 09	26 SEP 09	97d
CM5750	S26-27	14	06 JUN 09	22 JUN 09	28 SEP 09	15 OCT 09	97d
CM5760	S27-166	14	23 JUN 09	09 JUL 09	16 OCT 09	02 NOV 09	97d
CM5770	S166-28	14	09 JUL 09	24 JUL 09	03 NOV 09	18 NOV 09	97d
CM5780	S28-29	14	25 JUL 09	10 AUG 09	19 NOV 09	04 DEC 09	97d
CM5790	S29-32	14	11 AUG 09	28 AUG 09	05 DEC 09	21 DEC 09	97d
CM5800	S30-31	14	27 AUG 09	11 SEP 09	22 DEC 09	09 JAN 10	97d
CM5810	S31-32	14	12 SEP 09	28 SEP 09	09 JAN 10	25 JAN 10	97d
CM5820	S32-33	14	28 SEP 09	16 OCT 09	26 JAN 10	10 FEB 10	97d
CM5830	S33-34	14	17 OCT 09	03 NOV 09	11 FEB 10	26 FEB 10	97d
CM5840	S34-35	14	04 NOV 09	19 NOV 09	27 FEB 10	15 MAR 10	97d
CM5850	S35-36	14	20 NOV 09	05 DEC 09	16 MAR 10	31 MAR 10	97d
<b>S37-S60 (WO 010)</b>							
CM5559	Inspection Pit / Liaison with UJ/ UU Diversion	21	15 JUL 08	07 AUG 08	09 DEC 08	02 JAN 09	126d
CM5560	S37-38	14	08 AUG 08	23 AUG 08	05 NOV 09	20 NOV 09	374d
CM5570	S38-39	14	25 AUG 08	09 SEP 08	21 NOV 09	07 DEC 09	374d
CM5580	S39-40	14	10 SEP 08	25 SEP 08	08 DEC 09	23 DEC 09	374d
CM5590	S40-167	14	26 SEP 08	11 OCT 08	24 DEC 09	11 JAN 10	374d
CM5900	S167-168	14	13 OCT 08	28 OCT 08	12 JAN 10	27 JAN 10	374d
CM5910	S168-41	14	28 OCT 08	13 NOV 08	28 JAN 10	12 FEB 10	374d
CM5930	S41-42	14	14 NOV 08	29 NOV 08	13 FEB 10	01 MAR 10	374d
CM5940	S42-43	14	01 DEC 08	16 DEC 08	02 MAR 10	17 MAR 10	374d
CM5950	S43-44	14	17 DEC 08	02 JAN 09	18 MAR 10	02 APR 10	374d
CM5960	S44-45	14	03 JAN 09	19 JAN 09	03 APR 10	19 APR 10	374d
CM5970	S45-46	14	08 AUG 08	23 AUG 08	03 JAN 09	19 JAN 09	126d
CM5980	S171-50	14	10 SEP 08	25 SEP 08	09 FEB 09	24 FEB 09	126d
CM5990	S54-55	14	26 SEP 08	11 OCT 08	25 FEB 09	12 MAR 09	126d
CM6000	S55-56	14	13 OCT 08	28 OCT 08	13 MAR 09	28 MAR 09	126d
CM6010	S56-60	14	29 OCT 08	13 NOV 08	30 MAR 09	16 APR 09	126d
CM6020	S57-169	14	14 NOV 08	29 NOV 08	20 APR 09	07 MAY 09	126d
CM6030	S169-170	14	01 DEC 08	16 DEC 08	08 MAY 09	23 MAY 09	126d
CM6040	S170-58	14	17 DEC 08	02 JAN 09	25 MAY 09	11 JUN 09	126d
CM6050	S58-59	14	03 JAN 09	19 JAN 09	12 JUN 09	27 JUN 09	126d

Start Date 31 JAN 08  
 Finish Date 13 APR 10  
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Early start point  
 Early finish point  
 Early bar  
 Progress bar  
 Critical bar  
 Summary bar

Progress point  
 Critical point  
 Summary point  
 Start milestone point  
 Finish milestone point

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 Project Programmes Rev. 3

Date	Revision	Checked	Approved
16 APR 08	Revision 0	SIL	KYS
02 MAY 08	Revision 1	SIL	KYS
16 JUN 08	Revision 2	SIL	KYS
03 SEP 08	Revision 3	SIL	KC



Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
CM6060	S59-60	14	20 JAN 09	07 FEB 09	29 JUN 09	14 JUL 09	126d
<b>S57-S60 &amp; Clearance of Squattered Huts (WO 010)</b>							
CM6069	Inspection Pit / Liaison with UJ/ UU Diversion	21	15 JUL 08	07 AUG 08	16 FEB 09	13 MAR 09	183d
CM6070	S57-169	21	08 AUG 08	01 SEP 08	14 MAR 09	09 APR 09	183d
CM6080	S169-170	21	02 SEP 08	25 SEP 08	09 APR 09	08 MAY 09	183d
CM6090	S170-58	20	26 SEP 08	18 OCT 08	09 MAY 09	03 JUN 09	183d
CM6100	S58-59	14	20 OCT 08	04 NOV 08	04 JUN 09	19 JUN 09	183d
CM6110	S59-60	21	05 NOV 08	28 NOV 08	20 JUN 09	14 JUL 09	183d
<b>S60-S70 ( Incl removal of AC Pipe at S68-S71)</b>							
CM6119	Inspection Pit / Liaison with UJ/ UU Diversion	21	16 FEB 09	11 MAR 09	24 JUL 09	17 AUG 09	128d
CM6120	S60-61	12	12 MAR 09	25 MAR 09	18 AUG 09	31 AUG 09	128d
CM6130	S61-62	12	26 MAR 09	08 APR 09	01 SEP 09	14 SEP 09	128d
CM6140	S62-63	12	14 APR 09	27 APR 09	15 SEP 09	28 SEP 09	128d
CM6150	S65-66	12	28 APR 09	13 MAY 09	29 SEP 09	14 OCT 09	128d
CM6160	S66-68	12	14 MAY 09	27 MAY 09	15 OCT 09	29 OCT 09	128d
CM6170	S67-68	12	29 MAY 09	12 JUN 09	30 OCT 09	12 NOV 09	128d
CM6180	S68-69	12	13 JUN 09	26 JUN 09	13 NOV 09	26 NOV 09	128d
CM6190	S69-174	12	27 JUN 09	10 JUL 09	27 NOV 09	10 DEC 09	128d
CM6200	S174-70	12	11 JUL 09	24 JUL 09	11 DEC 09	24 DEC 09	128d
<b>S36-S64, S36A-S64A (Trenchless) WO 015</b>							
CM6209	Inspection Pit / Liaison with UJ/ UU Diversion	14	01 SEP 08	16 SEP 08	01 SEP 08	16 SEP 08	0
CM6210	S36A-63A (WO 015)	163	17 SEP 08	30 MAR 09	17 SEP 08	30 MAR 09	0
CM6220	S36-63 (WO 015)	163	17 SEP 08	30 MAR 09	17 SEP 08	30 MAR 09	0
<b>S36-S70 (Trenchless) WO 015</b>							
CM6229	Inspection Pit / Liaison with UJ/ UU Diversion	14	31 MAR 09	20 APR 09	31 MAR 09	20 APR 09	0
CM6230	S63-64 (WO 015)	53	21 APR 09	25 JUN 09	21 APR 09	25 JUN 09	0
CM6240	S64-70 (WO 015)	130	26 JUN 09	27 NOV 09	26 JUN 09	27 NOV 09	0
<b>S70-S75 (Trenchless)</b>							
CM6250	S70-73	70	28 NOV 09	19 FEB 10	28 NOV 09	19 FEB 10	0
CM6260	S73-75	50	20 FEB 10	19 APR 10	20 FEB 10	19 APR 10	0
<b>Archaeological Watching Brief</b>							
AW6269	Inspection Pit / Liaison with UJ/ UU Diversion	17	16 NOV 09	04 DEC 09	28 DEC 09	15 JAN 10	34d
AW6270	S47-172	9	05 DEC 09	15 DEC 09	16 JAN 10	28 JAN 10	34d
AW6280	S172-173	7	16 DEC 09	23 DEC 09	27 JAN 10	03 FEB 10	34d
AW6290	S173-48	7	24 DEC 09	02 JAN 10	04 FEB 10	11 FEB 10	34d
AW6300	S48-49	7	04 JAN 10	11 JAN 10	12 FEB 10	19 FEB 10	34d
AW6310	S49-50	10	12 JAN 10	22 JAN 10	20 FEB 10	09 MAR 10	34d
AW6320	S50-51	10	23 JAN 10	03 FEB 10	04 MAR 10	15 MAR 10	34d
AW6330	S51-52	10	04 FEB 10	15 FEB 10	16 MAR 10	26 MAR 10	34d
AW6340	S52-53	10	16 FEB 10	26 FEB 10	27 MAR 10	07 APR 10	34d
AW6350	S53-54	10	27 FEB 10	10 MAR 10	08 APR 10	19 APR 10	34d

Act ID	Activity Description	Rem Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
CM6269	Inspection Pit / Liaison with UJ/ UU Diversion	16	APR 08	08	08	08	0
CM6270	S47-172	7	MAY 08	08	08	08	0
CM6280	S172-173	7	JUN 08	08	08	08	0
CM6290	S173-48	7	JUN 08	08	08	08	0
CM6300	S48-49	7	JUN 08	08	08	08	0
CM6310	S49-50	10	JUN 08	08	08	08	0
CM6320	S50-51	10	JUN 08	08	08	08	0
CM6330	S51-52	10	JUN 08	08	08	08	0
CM6340	S52-53	10	JUN 08	08	08	08	0
CM6350	S53-54	10	JUN 08	08	08	08	0

▲ Early start point    ▲ Progress point  
▽ Early finish point    ▲ Critical point  
▬ Early bar    ▬ Summary point  
▬ Progress bar    ▬ Start milestone point  
▬ Critical bar    ▬ Finish milestone point  
▬ Summary bar

DC/2007/18  
 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works  
 Project Programme Rev. 3

Kaden  
 16 APR 08    Revision 0  
 02 MAY 08    Revision 1  
 16 JUN 08    Revision 2  
 03 SEP 08    Revision 3

Checked    Approved  
 STL    KYS  
 STL    KYS  
 STL    KYS  
 STL    KC



## **Appendix F**

### **Summary of Implementation Status of Mitigation Measures during Site Inspection**



## Environmental Mitigation Implementation Schedule

	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Air Quality</b>					
<ul style="list-style-type: none"> <li>▪ Stockpiles of imported material kept on site should be contained within hoarding, dampened and / or covered during dry and windy weather.</li> <li>▪ Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses.</li> <li>▪ Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.</li> <li>▪ Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.</li> <li>▪ Unpaved areas should be watered regularly to avoid dust generation.</li> <li>▪ The enclosures should be around the main dust-generating activities.</li> <li>▪ All plant and equipment should be well maintained e.g. without black smoke emission.</li> <li>▪ Open burning should be prohibited.</li> </ul>	All areas		√		
	All areas	√			
	All areas	√			
	All areas	√			
	Site Egress	√			
	All areas	√			
	All areas	√			
	All areas	√			
<b>Noise Impact</b>					
<ul style="list-style-type: none"> <li>▪ Quite powered mechanical equipment (PME) or method should be used.</li> <li>▪ The number plant should be restricted (1 item for each type of plant).</li> <li>▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.</li> <li>▪ Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> <li>▪ Plant known to emit noise strongly should be orientated so that the noise is directed away from nearby NSRs.</li> <li>▪ The constructions works should be scheduled to minimize noise nuisance.</li> <li>▪ Air compressors and hand held breakers should have noise labels.</li> <li>▪ Compressors and generators should operate with door closed.</li> </ul>	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
<b>Water Quality</b>					
<b>General Construction Works</b>					
<ul style="list-style-type: none"> <li>▪ Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal water and stormwater drains.</li> <li>▪ All fuel tanks and storage areas should be provided with locks and be sited on sealed area, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.</li> <li>▪ Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.</li> </ul>	All areas	√			
	All areas		√		
	All areas	√			



Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
<b>Waste Management</b>						
<b>General Site Wastes</b>						
<ul style="list-style-type: none"> <li>Appropriate measures, such as transporting wastes in enclosed containers, should be taken to minimize windblown litter and dust to nearby environment.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Sufficient waste disposal points and regular waste collection for disposal should be provided.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>A collection area for construction site waste should be provided where waste can be stored prior to removal from site.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Records of the quantities of waste generated, recycled and disposed should be kept and maintained.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Different types of waste should be segregated and stored in different container, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.</li> </ul>	All areas	√				
<b>Chemical Wastes</b>						
<ul style="list-style-type: none"> <li>After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Any unused chemicals or those with remaining functional capacity should be recycled.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordinance.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges.</li> </ul>	All areas		√			
<b>Construction and Demolition (C&amp;D) Wastes</b>						
<ul style="list-style-type: none"> <li>C&amp;D waste should be separated on site before disposal.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Inert material, such as concrete and rubble, should be re-used on site.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Steel and other metals should be separated for re-use and / or recycling prior to disposal of C&amp;D material.</li> </ul>	All areas	√				
<b>Ecological Impact</b>						
<ul style="list-style-type: none"> <li>Labelling and fencing of the uncommon tree species.</li> </ul>	All areas	√				
<ul style="list-style-type: none"> <li>Avoidance of use of woodland habitats as Works Area, in particular where trees located.</li> </ul>	All areas	√				



Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Landscape and Visual Impact</b>					
<ul style="list-style-type: none"> <li>Existing trees should be retained.</li> <li>Damage to vegetation should be minimized by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.</li> <li>Short excavation and immediate backfilling section upon completion of works should be performed to reduce active site area.</li> </ul>	All areas	√			
<b>Site Practice</b>					
<ul style="list-style-type: none"> <li>The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials.</li> <li>All generators, fuel and oil storage are within bundle areas.</li> <li>Oil leakage from machinery, vehicle and plant should be prevented.</li> <li>The Environmental Permit should be displaced conspicuously on site.</li> </ul>	All areas	√			
	All areas		√		
	All areas		√		
	All areas		√		
	All areas	√			



## Figures

**SOK KWU KWAN**

**LAMMA ISLAND**

**KEY PLAN**

**NOTES :**

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. DS05/61/2006/1.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE WORKS.

3. LAYOUT ISSUE FOR CONSULTATION	JL	05
4. REVISED ISSUE FOR SUBMISSION	JL	05
5. REVISED ISSUE FOR SUBMISSION	JL	05
6. REVISED ISSUE FOR SUBMISSION	JL	05
7. REVISED ISSUE FOR SUBMISSION	JL	05
8. REVISED ISSUE FOR SUBMISSION	JL	05

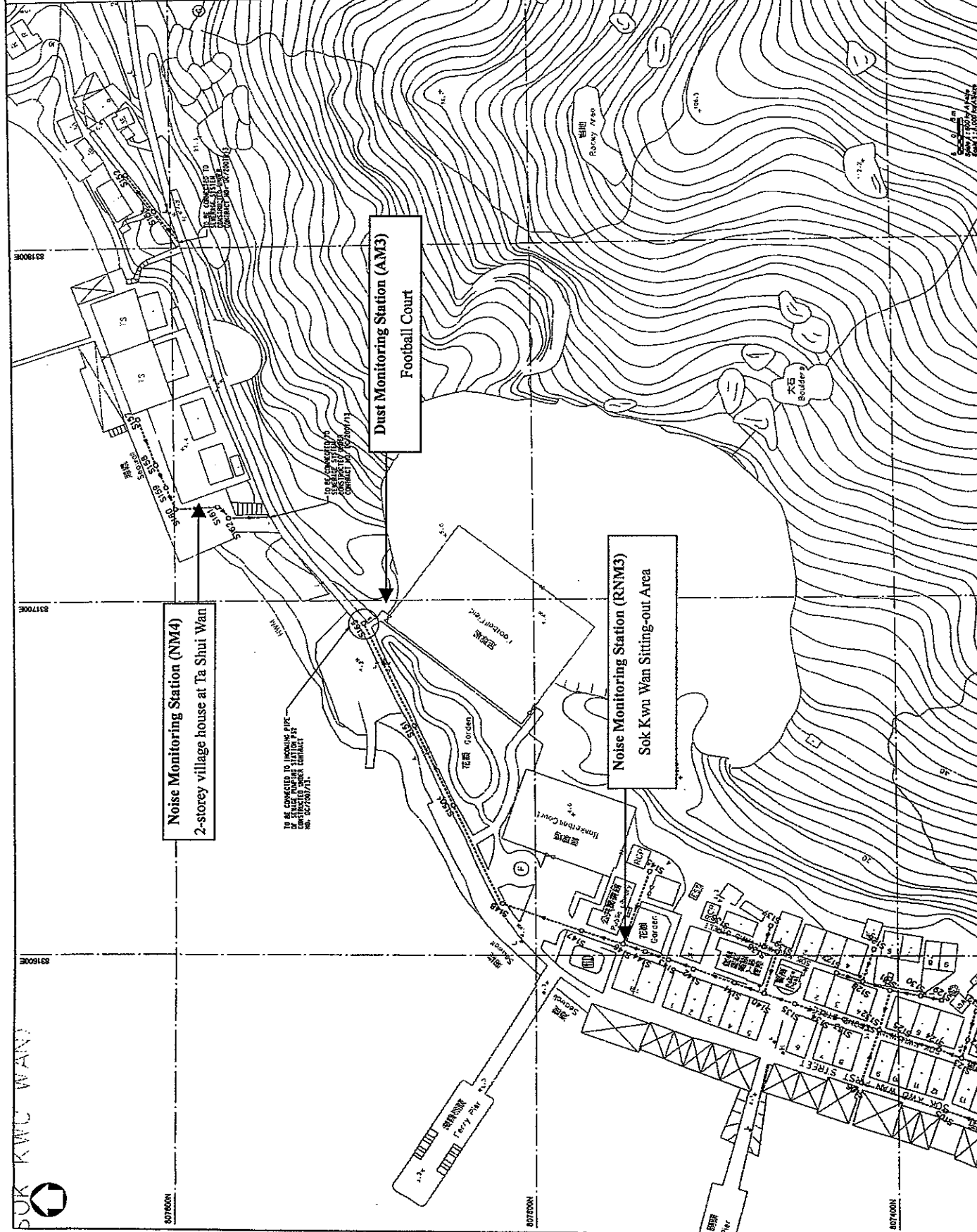
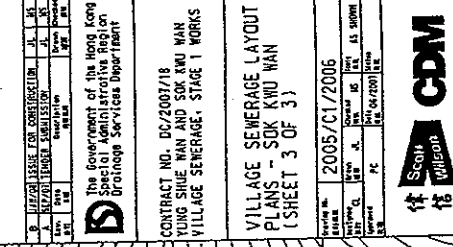
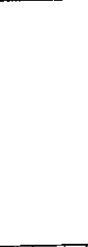
The Government of the Hong Kong Special Administrative Region

CONTRACT NO. DC/2007/18

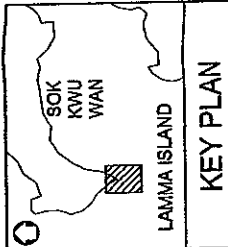
YUNG SHUE WAN AND SOK KWU KWAN VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU KWAN (SHEET 3 OF 3)

DATE	2005/01/2006
SCALE	AS SHOWN
PROJECT NO.	DC/2007/18
DESIGNER	SCOTT WILSON CDM JOURNENTURE



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## KEY PLAN

NOTES 1  
 1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. DS03/01/001.

NO.	DATE	DESCRIPTION	BY	CHKD.	APP'D.
1	10/10/05	ISSUED FOR CONSTRUCTION	JL	US	US
2	10/10/05	REVISED SUBMITTAL	JL	US	US

The Government of the Hong Kong Special Administrative Region  
 Proliferation Services Department

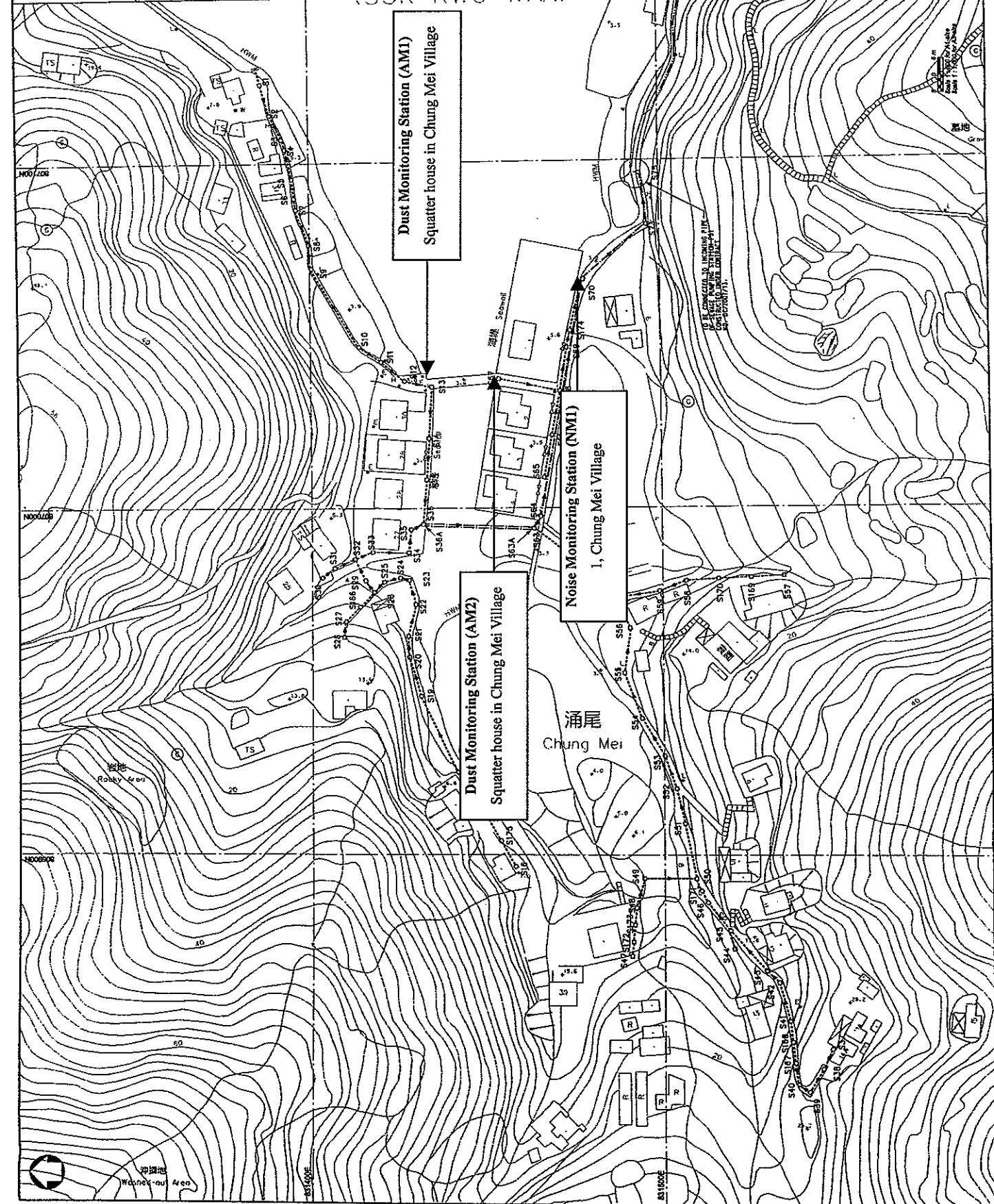
CONTRACT NO. DC/2007/18  
 YUNG SHUE WAN AND SOK KWU WAN  
 VILLAGE SEWERAGE STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT  
 PLANS - SOK KWU WAN  
 (SHEET 1 OF 3)

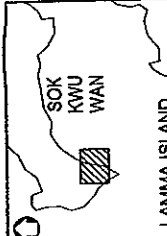
Revision No. 2005/C1/2004  
 Date 10/10/05  
 Scale 1:1000  
 Project No. DC/2007/18



SCOTT WILSON CON-JOINT VENTURE







**KEY PLAN**

NOTES:  
1- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 205/2005/18.

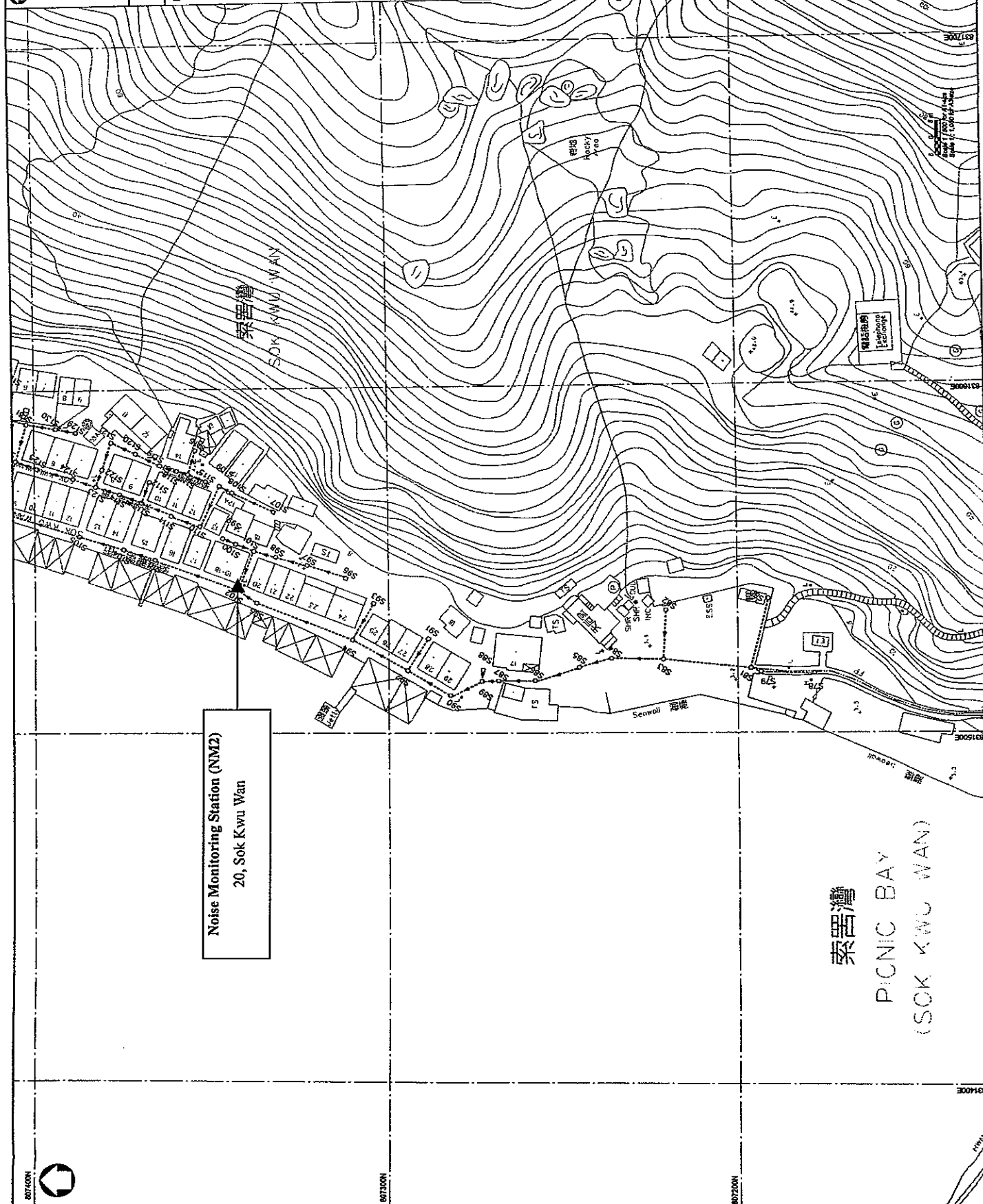
NO.	DATE	DESCRIPTION	BY	CHKD.
1	2005/07/18	ISSUED FOR SUBMISSION		
2	2005/07/18	REVISED FOR SUBMISSION		

The Government of the Hong Kong Special Administrative Region  
Drainage Services Department

CONTRACT NO. DC/2007/18  
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 2 OF 3)

Working No: 2005/C1/2005  
Drawing No: 205/2005/18  
Scale: 1:500  
Date: 2005/07/18



807400N  
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