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VERSION.: 6

DSD CONTRACT NO.: DC/2009/08

CONSTRUCTION OF YUEN LONG SOUTH BRANCH SEWERS AND EXPANSION OF HA TSUEN SEWAGE PUMPING STATION

BASELINE REPORT – EXPANSION OF HA TSUEN SEWAGE PUMPING STATION

PREPARED FOR

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) COMPANY LIMITED

Quality Index

Date	Reference No.	Prepared By	Approval By
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For attention of: Mr. T. W. Tam

Dear Mr. Tam,

Contract No. DC/2009/08 - Construction of Yuen Long South Branch Sewers and Expansion of Ha Tsuen Sewage Pumping Station
Environmental Permit No.: EP-327/2009/A - Condition 4.3
Baseline Monitoring Report (For Expansion of Ha Tsuen Sewage Pumping Station)

With reference to ET's captioned report – version 6 (ET's ref.: TCS00491/09/600/R0023v6 dated 14 July 2010) submitted to us on 15 July 2010, we hereby verify the captioned report – version 6 under EP-327/2009/A Condition 4.3.

Should there be any queries, please feel free to contact the undersigned at 2911 2533.

Yours sincerely,

Terence Kong
Independent Environmental Checker
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TK/mc

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EXECUTIVE SUMMARY

ES.01 The China State Construction Engineering (Hong Kong) Limited (hereinafter "CSCE") has been awarded by the Drainage Services Department (DSD) the Contract DC/2009/08 *Construction of Yuen Long South Branch Sewers and Expansion of Ha Tsuen Sewage Pumping Station* (the Project) in October 2009.

ES.02 For ease of reporting, the baseline monitoring report for the DC/2009/08 Project will be split to two separate parts as follows:

- Expansion of the existing Ha Tsuen Sewage Pumping Station (under Environmental Permit No.EP327/2009A);
- Construction of a sewage pumping station near Shui Tsui San Tsuen Road in Yuen Long South; and construction of about 9km of sewers and rising mains with diameter ranging from 200-1500mm in Yuen Long South and Ha Tsuen areas (without Environmental Permit).

ES.03 Action-United Environmental Services and Consulting (AUES) has been commissioned by CSCE to be an Environmental Team (ET) to implement the EM&A program in compliance with the EP and the EM&A Manuals. As part of the project EM&A program, baseline monitoring is required to determine the ambient environmental conditions before commencement of any major construction works.

ES.04 Apart from DC/2009/08 – *Expansion of Ha Tsuen Sewage Pumping Station*, there are two existing CEDD projects CV/2008/03 and CV/2007/29 undertaking at Ha Tsuen Road. Under a similar EM&A programme, concurrent designated air and noise monitoring stations were identified and performed by the CEDD project CV/2008/03. Therefore, air quality and noise monitoring data results recorded by CV/2008/03 between June 2009 and January 2010 were adopted for the baseline Action/ Limit Level establishment for the Project.

ES.05 According to the Project EM&A Manual, the water sampling point for local stream course (hereinafter as R1) is designated at Tin Shui Wai Nullah. As R1 is located at the midpoint between two pedestrian flyovers athwart Tin Shui Wai nullah, which apart about 320 meters distance, there is technical difficulty and safety is concerned when conducting the sampling. Therefore, the sampling point for the baseline monitoring was relocated to about 160 meters downstream of R1 (hereinafter as R1a) and the baseline monitoring was conducted between 22 December 2009 and 18 January 2010.

ES.06 This report presents the baseline monitoring results of air quality, noise and stream water quality and establishment of Action and Limit (A/L) levels for the Project in accordance with the EM&A Manual requirements. An appropriate set of air and noise data extracted from CV/2008/03 and water analysis results collected at local stream Tin Shui Wan Nullah in between 22 December 2009 and 18 January 2010 were used as baseline reference for the performance criteria set up as proposed by ET and agreed by the IEC.

Action and Limit Levels for Air Quality

Monitoring Location	Action Level (μg /m^3)		Limit Level (μg /m^3)	
	1-hour	24-hour	1-hour	24-hour
AM1	305	162	> 500	> 260
AM2	310	190	> 500	> 260

Action and Limit Levels for Noise

Monitoring Location	Action Level	Limit Level in dB(A)
	0700-1900 hrs on normal weekdays	
NM1	When one or more documented complaints are received	70 dB(A) of Leq(30min) during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 65 dB(A) during school examination periods
NM2		70 dB(A) of Leq(30min) during normal hours from 0700 to 1900 hours on normal weekdays

Action and Limit Levels for a Local Stream Water Quality Monitoring (R1b)

Parameter	Action Level	Limit Level
DO (mg/L)	4.6	4 mg/L or 40% saturation at 15^{o}C
Turbidity (NTU)	15.6	16.2
SS (mg/L)	31.5	31.9

ES.07 The A/L levels established will be used to evaluate environmental impacts in association with the construction of the expansion of existing Ha Tsuen Sewage Pumping Station and to evaluate the effectiveness of the project mitigation measures.

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1 INTRODUCTION

PROJECT BACKGROUND

1.01 The China State Construction Engineering (Hong Kong) Limited (hereinafter "CSCE") has been awarded by the Drainage Services Department (DSD) the Contract D**C/2009/08** *Construction of Yuen Long South Branch Sewers and Expansion of Ha Tsuen Sewage Pumping Station* (the Project) in October 2009.

1.02 The Project involves construction of about 9km of sewers and rising mains with diameter ranging from 200-1500mm in Yuen Long South and Ha Tsuen areas, a sewage pumping station near Shui Tsui San Tsuen Road in Yuen Long South, expansion of existing Ha Tsuen Sewage Pumping Station. The site layout plan is shown in ***Annex A***.

1.03 The construction of expansion Ha Tsuen Sewage Pumping Station is under a statutory EIA (Register No. AEIAR-072/2003) study for "*Upgrading and expansion of San Wai Sewage Treatment Works and expansion of Ha Tsuen Pumping Station*" commissioned by the DSD. An Environmental Permit (No. EP-327/2009) for upgrading and expansion of Sewage Treatment Works at San Wai (excluded for the Project) and Ha Tsuen Sewage Pumping Station has been obtained by DSD in January 2009 for the relevant works.

1.04 According to the Section 25 of the Particular Specification (PS) and the Environmental Permit No. EP-327/2009, the scope of monitoring includes air quality, construction noise, water quality and environmental site audit. It should be undertaken in accordance with the Environmental Monitoring and Audit Manual as part of EIA report [AEIAR-072/2003] (hereafter "the EM&A Manual") by an independent Environmental Team (ET). Also, monitoring and audit works for landscaping and visual will be undertaken as part of the EM&A programme.

1.05 Action-United Environmental Services and Consulting (AUES) has been commissioned by CSCE as the ET to implement the relevant EM&A program. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions.

1.06 As the works of the Project will be commenced in different period of time, the environmental monitoring and audit report for the Project will be split to two separate parts as follows:

(a) Expansion Ha Tsuen Sewage Pumping Station (under Environmental Permit No.EP327/2009);

(b) Construction of sewers and rising mains with diameter ranging from 200-1500mm in Yuen Long South and Ha Tsuen areas and a sewage pumping station near Shui Tsui San Tsuen Road in Yuen Long South (the works without Environmental Permit)

1.07 This report presents the baseline monitoring results of air quality and noise extracted from CV/2008/03 and stream water quality collected at local stream Tin Shui Wan Nullah between 22 December 2009 and 18 January 2010. Those data were adopted to establish environmental performance criteria for Expansion Ha Tsuen Sewage Pumping Station to according with EM&A Manual requirements. It mainly covers the details of the baseline monitoring program including project background, monitoring methodology, results and findings, and Action/Limit (A/L) levels for air, noise and water quality established for the subsequent EM&A program during the impact phase for construction of expansion of Ha Tsuen Sewage Pumping Station.

REPORT STRUCTURE

The Baseline Monitoring Report is structured into the following sections:-

Section 1 Introduction
Section 2 Summaries of Baseline Monitoring Requirement.
Section 3 Baseline Monitoring Methodology
Section 4 Baseline Monitoring Results
Section 5 Conclusion and Recommendation

2 SUMMARIES OF BASELINE MONITORING REQUIREMENT

2.01 The Environmental Monitoring and Audit requirements are set out in the EM&A Manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of expansion of Ha Tsuen Pumping Station. Also, monitoring and audit works for landscaping and visual shall be undertaken as part of the EM&A programme. This report presents the results obtained during the baseline monitoring program undertake before the work commencement.

2.02 A summary of the baseline EM&A requirements for air, noise and local stream water monitoring are presented in the sub-sections below.

MONITORING PARAMETERS

2.03 According to the *EM&A Manual*, the environmental aspect implemented by ET included air quality, construction noise as well as the water quality, also landscape and visual shall be monitored by a competent landscape architect.

2.04 The monitoring parameters are summarized in ***Table 2-1***.

Table 2-1 Summary of Monitoring Parameters

Environmental Aspect	Parameters
Air Quality	• 1-hour Total Suspended Particulate (hereinafter '1-hr TSP'); and • 24-hour Total Suspended Particulate (hereinafter '24-hr TSP').
Construction Noise	• A-weighted equivalent continuous sound pressure level (30min) (hereinafter 'Leq(30min)' during the normal working hours; and • A-weighted equivalent continuous sound pressure level (5min) (hereinafter 'Leq(5min)' for construction work during the restricted hours.
Water Quality – Local Stream Course	• In Situ Measurement - Dissolved Oxygen (DO) and Turbidity • Laboratory Analysis - Suspended Solids (SS)
Water Quality – Effluent Discharge	• In Situ Measurement - pH value • Laboratory Analysis - SS and Chemical oxygen demand (COD)
Landscape and Visual Resources	***By others and reported separately*** • Vegetation survey undertaken on an "area" basis to identify representative types and species composition; • Assessment of landscape character; and • Tree survey report.

MONITORING LOCATIONS

Monitoring Locations recommended in the EM&A Manual

2.05 According to *EM&A Manual* ***Sections 2.2.1.18, 3.4.1.1*** & ***4.4.1.4***, and Figures ***2.1***, ***2.2***, ***3.1***, ***3.2*** and ***4.2***, there are four air and noise monitoring stations and one water quality monitoring station identified as sensitivity receiver during construction phase of the Project. For the four designated air and noise monitoring locations, two are located within the San Wai STW and other two are within the existing Ha Tsuen Pumping Station. Also, a local stream course of water quality monitoring station is identified in Tin Shui Wai Nullah. The graphics of designated monitoring are shown in ***Annex B***.

2.06 The area of landscape and visual monitoring is recommended the entire selected route and within compounds in accordance with *the EM&A Manual* ***Section 6.3.1.1***.

Air Quality

2.07 Although four (4) air sensitive receivers are recommended to be carried out in the EM&A programme as stipulated in the *EM&A Manual*, to study the location of air monitoring stations

related to the expansion of Ha Tsuen Sewage Pumping Station, two identified ASRs should be therefore performed and they are listed in ***Table 2-2*** and illustrated in ***Annex B***.

Table 2-2 Designated Sensitive Receiver Undertake Air Quality Monitoring Stipulated in the EM&A Manual

No.	Name of ASR
1	Tin Shing Court
2	Home for Aged at Sha Chau Lei Road

Construction Noise

2.08 Similarly to the air quality monitoring, two (2) identified NSRs should be performed and are listed in ***Table 2-3*** and illustrated in ***Annex B***.

Table 2-3 Designated Sensitive Receiver Undertake Construction Noise Monitoring Stipulated in the EM&A Manual

No.	Name of NSR
1	Tin Shing Court
2	Home for Aged at Sha Chau Lei Road

Water Quality

2.09 One designated location of a local stream course located at the midpoint in between two pedestrian flyovers athwart Tin Shui Wai Nullah, is recommended to carry out water quality monitoring in accordance with the EM&A Manual under the project and illustrated in ***Annex B***.

2.10 According to the EM&A Manual Section 4.3.15, the effluent water quality monitoring are proposed to be carried out at a representative discharge point(s) where effluent discharge from the construction sites into the local water course prior treated in a wastewater treatment system.

Landscape and Visual

2.11 The selected route and area, frequency and requirements of landscape & visual monitoring will be proposed by a competent landscape architect.

Proposed Monitoring Locations for Air Quality, Construction Noise and Water Quality of the Project

Air Quality and Construction Noise

2.12 In order to identify and seek for the access for the air and noise monitoring locations designated in the EM&A Manual, site inspection and the premises request about the monitoring locations have been carried out by the CSCE and ET. A designated monitoring location Yeung Chun Pui Care & Attention Home located at Sha Chau Lei Road has been identified and this premises was also granted by CEDD existing project CV/2008/03 for air and dust monitoring.

2.13 However, installation of sampler at another designated monitoring location Tin Shing Court was rejected by Incorporated Owners of Yuen Long Tin Shing Court. In this case, Ho Tak Sum Primary School was proposed to be the replacement to undertake air quality and construction noise monitoring during the expansion works of Ha Tsuen Sewage Pumping Station. The proposed alternative location is based on the EM&A Manual Clauses 2.2.1.20 and 3.4.1.3 as below:-

- The proposed location is one of air and noise sensitive receiver as mentioned in the *"EIA Study for the Upgrading and Expansion of San Wai STW and the Expansion of Ha Tsuen PS"* (Register No. AEIAR-072/2003);
- Which is built within Tin Shing Court and adjacent the denied monitoring stations;

- The distance between the construction site Ha Tsuen Sewage Pumping Station and Ho Tak Sum Primary School is shorter than other three education sensitive receivers such as Ho Ming Primary School, Pui Shing Catholic Secondary School and Tang Siu Tong Secondary School at Tin Shui Wai direction; and
- According to EIA study, the construction noise prediction is shown that Ho Tak Sum Primary School is high potential impacted by the construction noise under the project.

2.14 The premises of Ho Tak Sum Primary School was also granted by CEDD existing project CV/2008/03 for air and dust monitoring.

Water Quality

2.15 According to the Project EM&A Manual, the water sampling point for local stream course (hereinafter as R1) is designated at Tin Shui Wai Nullah. As R1 is located at the midpoint between two pedestrian flyovers athwart Tin Shui Wai Nullah, which are 320 meters apart, there is technical difficulty and safety is concerned when conducting the sampling. Therefore, proposal of relocation of sampling point to about 160 meters downstream of R1 (hereinafter as R1a) was recommended by ET during the joint site visit. The proposal was agreed by the IEC and ER and the baseline monitoring for water quality was conducted at R1a during the period from 22 December 2009 to 18 January 2010 as instructed by the Contractor.

2.16 Upon completion of the baseline monitoring, EPD pointed out that there are several storm outfalls near R1a, it is considered that R1a may not be sensitive enough to allow early detection of water quality on the nullah. A new sampling point located at approximately 160m upstream of the R1 (hereinafter as R1b) was therefore proposed for the subsequent impact monitoring. A proposal (submission ref.: TCS00491/09/300/L0080) regards to the proposed Action/Limit Levels for water quality monitoring and impact monitoring point was submitted and it has been verified by IEC and no further comments by EPD.

2.17 The proposed monitoring stations undertaken for EM&A programme (to be agreed by IEC and endorsed by EPD) are detailed to list in ***Table 2-4*** and show in ***Annex C***.

Table 2-4 Proposed Impact Air, Noise and water Quality Monitoring Stations for the Project

Env. Aspect	Monitoring Location ID	Identified Address	Remarks
Air	AM1	Ho Ming Primary School	Replace the Designated Monitoring Station Tin Shing Court
	AM2	Yeung Chun Pui Care & Attention Home	Designated in the EM&A Manual
Noise	NM1	Ho Ming Primary School	Replace the Designated Monitoring Station Tin Shing Court
	NM2	Yeung Chun Pui Care & Attention Home	Designated in the EM&A Manual
Water	R1b	The crossing Tin Shui Wai Nullah pedestrian flyover	About 160 meters upstream from the designated location as stipulated in the EM&A Manual. Also, closer the existing Ha Tsuen Pumping Station

MONITORING FREQUENCY

2.18 According to the EM&A Manual Sections 2.2.1.22, 3.5 and 4.4.1.5, baseline monitoring is covered air quality, noise and water quality of local stream course.

Air Quality Monitoring

Frequency: Daily for 24-hour TSP and three times a day for 1-hour TSP.

Duration: 14 consecutive days

Noise Monitoring

Frequency: Daily

Duration: 14 consecutive days

Water Quality Monitoring of Local Stream Course

Frequency: 3 days per week.

Depths: mid-Depth

Duration: 4 weeks and the interval between 2 sets of monitoring is not less than 36 hours

Landscape and Visual

2.19 A one-off site inspection to determine with reference to the habitat maps included in the EIA Report.

MONITORING EQUIPMENT

Air Quality Monitoring

2.20 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), **Appendix B**. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to approve.

2.21 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory

Noise Monitoring

2.22 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m s-1

Water Quality Monitoring

2.23 *Dissolved Oxygen and Temperature Measuring Equipment* – The instrument should be portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring as included a DO level in the range of 0 – 20mg L-1 and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.

2.24 *Turbidity (NTU) Measuring Equipment* – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.

2.25 *Water Depth Detector* – A portable, battery-operated echo sounder should be used for the determination of water depth at the designated monitoring station.

2.26 *Sample Containers and Storage* – Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).

2.27 *Suspended Solids Analysis* – Analysis of suspended solids shall be carried out in a HOKLAS or

other international accredited laboratory.

Landscape and Visual

2.28 All necessary equipments or tools will be stipulated in baseline survey from others in the report.

DERIVATION OF ACTION/LIMIT (A/L) LEVELS

2.29 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of derivation of Action/Limit (A/L) Levels for air quality, construction noise, water quality are shown in ***Table 2-5***, ***2-6*** and ***2-7*** respectively.

Table 2-5 Derivation of Action and Limit Levels for Air Quality

Parameter	Action Level	Limit Level
1-hour TSP	For baseline level ≤ 384 μg/m^3, Action level = (Baseline*1.3 + Limit level)/2; For baseline level > 384 μg/m^3, Action level = Limit level.	> 500 **μg/m^3**
24-hour TSP	For baseline level ≤ 200 μg/m^3, Action level = (Baseline*1.3 + Limit level)/2; For baseline level > 200 μg/m^3, Action level = Limit level.	> 260 **μg/m^3**

Table 2-6 Derivation of Action and Limit Levels for Construction Noise

Time Period	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hours on normal weekdays	When one documented complaint is received	> 75* dB(A)

*Note: * Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.*

Table 2-7 Derivation of Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/L (mid-depth)	5%ile of baseline data	4 mg/L or 40% saturation at 15 ^{o}C
SS in mg/L (mid-depth)	95%ile of baseline data	99%ile of baseline data
Turbidity in NTU (mid-depth)	95%ile of baseline data	99%ile of baseline data

3 BASELINE MONITORING METHDOLOGY

BASELINE MONITORING AT THE LOCATION

3.01 In order to identify and seek for the access of the air and noise monitoring locations designated in the EM&A Manuals, site inspection and the premises request has been conducted by the CSCE and ET. A designated monitoring location Yeung Chun Pui Care & Attention Home has been identified in accordance with the EM&A Manual, however the dust monitoring equipment (HVS) was already set-up by CSCE as a main contractor of CEDD Contract CV/2008/03 *Ping Ha Road Improvement Works – Ha Tsuen Section – Remaining Works.* Also, the proposed monitoring station Ho Tak Sum Primary School is in same location. During the course of discussion with IEC, ER, ETL and CSCE, it is agreed to use the data extracted from CEDD Contract CV/2008/03 between 22 June 2009 to 18 January 2010 to establish the Action/Limit Level. Therefore, no air quality and noise baseline monitoring was undertaken.

3.02 The baseline water quality monitoring was conducted between 22 December 2009 and 18 January 2010 at the initially proposed sampling point R1a. During the baseline monitoring period, there were no construction activities work at Ha Tsuen Sewage Pumping Station or other external influencing factors of significant concern observed by the ET. For the impact monitoring, the new proposed location R1b will be performed for subsequent local stream water quality monitoring during construction phase as agreed by IEC and no further comments by EPD (refer to submission to EPD ref.: TCS00491/09/300/L0080).

MONITORING EQUIPMENT AT BASELINE MONITORING

3.03 The water quality monitoring equipments using for the EM&A program was proposed by ET and verified by prior of monitoring work commencement. The detail of equipments using for baseline monitoring is listed in ***Table 3-1*** as below; and the availed calibration certificates are shown in ***Annex D***.

Table 3-1 Water Quality Monitoring Equipments

Equipment	Model / Description
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends
Thermometer & DO meter	YSI 550A DO Meter
Turbidimeter	Hach 2100p
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box

MONITORING PROCEDURES

3.04 Water quality monitoring was conducted at mid-depth of the water column. The sampling produce with the in-situ monitoring are presented as below:

Sampling Procedure

3.05 Water sample was be collected by the ET using a water sampler. A weighted measurement tape was used for the determination of water depth at the station. At the station, stream water sample was collected at mid-depth

3.06 The water sampler was lowered into the water body at the predetermined depth. The trigger system of the sampler should been activated with a messenger. The opening ends of the sampler then were closed accordingly and water samples were collected.

3.07 The sample container was rinsed with a portion of the water sample. The water sample then was transferred to the high-density polythene bottles as provided by the laboratory, labeled with a unique sample number and sealed with a screw cap.

3.08 Before commencement of the sampling, general information such as the date and time of sampling and weather condition as well as the personnel responsible for the monitoring were be recorded on the monitoring field data sheet.

3.09 A 'Willow' 33-litter plastic cool box packed with ice was used to preserve the collected water samples prior to arrival at the laboratory for chemical determination. The water temperature of the cool box was maintained at a temperature as close to 4^0C as possible without being frozen. Samples collected were delivered to the laboratory upon collection

Dissolved Oxygen (DO)

3.10 A portable YSI 550A DO Meter is used for in-situ DO measurement. The DO meter is capable of measuring DO in the range of 0 - 20 mg/L and 0 - 200 % saturation and checked against water saturated ambient air on each monitoring day prior to monitoring.

3.11 Although the DO Meter automatically compensates ambient water temperature to a standard temperature of 20^0C for ease of comparison of the data under the changing reality, the temperature readings of the DO Meter are recorded in the field data sheets.

Turbidity

3.12 A portable Hach 2100p turbidity Meter is used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU. Checked performance against on each monitoring day prior to monitoring.

Suspended Solids (SS)

3.13 All water samples were analyzed with Suspended Solids (SS) as specified in the *EM&A Manual* by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). SS analysis were determined by the laboratory upon receipt of the water samples using HOKLAS accredited analytical methods namely ALS Method EA-025. The certification of laboratory with HOKLAS accredited analytical tests are provided in ***Annex D***.

DATA MANAGEMENT AND DATA QA/QC CONTROL

3.14 The baseline monitoring data were handled by the ET's in-house data recording and management system.

3.15 The monitoring data recorded in the equipment and laboratory results were input directly into the computerized database and checked by personnel other than those who input the data; and also properly maintained by the ET.

3.16 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory testing.

METEOROLOGICAL INFORMATION

3.17 The meteorological information was extracted from the Hong Kong Observatory (Lau Fau Shan Station) and presented in ***Annex I***. The data includes wind direction, wind speed, humidity, rainfall, air pressure and temperature etc that in general is required for evaluating the air quality impact arising from the construction activities.

4 BASELINE MONITORING RESULTS

4.01 The baseline monitoring schedule is presented in ***Annex E*** and the monitoring results are detailed in the following sub-sections.

RESULTS OF WATER QUALITY OF BASELINE MONITORING

4.02 The water baseline monitoring was carried out before construction commencement in the period of 22 December 2009 to 18 January 2010 as instructed to meet their tentative programme by the Contractor although the initially proposal sampling point R1a. The results are presented in ***Table 4-1*** and Suspended Solids of laboratory data reports are shown in ***Annex F***.

Table 4-1 Results of Baseline Water Quality Monitoring at a Local Stream Tin Shui Wai Nullah R1a

Sampling		Depth (m)	Temp. (℃)	DO (mg/L)	Turbidity (NTU)	SS (mg/L)
Date	Time					
22-Dec-09	13:50	0.28	20.1	6.72	10.6	31.0
				6.64	11.2	
24-Dec-09	11:30	0.25	21.8	12.13	8.9	30.0
				12.10	8.67	
28-Dec-09	16:30	0.30	15.9	7.76	15.6	8.0
				7.72	15.4	
30-Dec-09	16:30	0.30	18.3	7.05	14.2	23.0
				6.86	13.7	
2-Jan-10	16:15	0.40	19.0	8.51	12.2	15.0
				8.41	11.8	
4-Jan-10	16:00	0.40	19.9	9.11	12.8	21.0
				9.00	12.7	
6-Jan-10	17:00	0.30	17.9	4.28	16.4	31.0
				4.25	15.4	
8-Jan-10	16:40	0.30	16.3	8.56	14.8	32.0
				8.49	14.9	
11-Jan-10	16:20	0.40	16.0	10.18	15.1	22.0
				9.99	14.7	
13-Jan-10	16:55	0.40	16.9	10.57	11.2	27.0
				10.47	10.9	
15-Jan-10	17:00	0.40	17.8	10.09	13.7	21.0
				10.02	13.1	
18-Jan-10	16:10	0.30	20.7	9.23	11.1	31.0
				9.02	11.2	

4.03 According to above ***Table 4-1***, the results are summarized to present in ***Tables 4-2***.

Table 4-2 Summarized the Water Quality Monitoring Results at R1a

Parameters	Min	Max.	Average	Percentile			
				1%	5%	95%	99%
Dissolved Oxygen (mg/L)	4.3	12.1	8.6	4.3	4.6	11.9	12.1
Turbidity (NTU)	8.7	16.4	12.9	8.7	9.2	15.6	16.2
Suspended Solids (mg/L)	8.0	32.0	24.3	8.8	11.9	31.5	31.9

RECOMMENDED ACTION/LIMIT LEVELS

Water Quality

4.04 According to the Project EM&A Manual, the water sampling point for local stream course (hereinafter as R1) is designated at Tin Shui Wai nullah. As R1 is located at the midpoint between two pedestrian flyovers athwart Tin Shui Wai nullah, which are 320 meters apart, there

is technical difficulty and safety is concerned when conducting the sampling. The Environmental Team (ET) has therefore proposed to relocate the sampling point to about 160 meters downstream of R1 (hereinafter as R1a). The proposal was agreed by the IEC and ER and the baseline monitoring for water quality was conducted at R1a during the period from 22 December 2009 to 18 January 2010 as instructed by the Contractor.

4.05 Proposal for relocation of sampling point dated 20 January 2010 was submitted for EPD's approval. However, there are several storm outfalls near R1a, it is considered that R1a may not be sensitive enough to allow early detection of water quality on the nullah. A new sampling point located at approximately 160m upstream of the R1 (hereinafter as R1b) was therefore proposed. Also, water sampling at R1b for impact monitoring was conducted since 8 February 2010 of the Project commencement.

4.06 Since the construction works at HTSPS was commenced by the Contractor in early February 2010, baseline conditions at R1b prior to the commencement of construction works could not be established. In order to select a proper water quality monitoring data to establish the Action/ Limit Level and determine the environmental acceptance criteria. The monitoring data collected at Location R1a is proposed to establish Action/Limit Levels. The justification is as below:-

- Only monitoring data of Location R1a was collected before the commencement of construction works at Ha Tsuen Pumping Station;
- The distance between Location R1a and R1b is approximately 320m and they are located at the same nullah, it is considered that the distance correction factor should not be significant;
- Since 8 February 2010, water sampling for impact monitoring carried out at Location R1b is ongoing. When comparing the results collected from Location R1b in the period from 8 February 2010 to 8 March 2010 (confirm no runoff or wastewater discharge from the site) with the baseline results monitored between 22 December 2009 and 18 January 2010 at Location R1a, it is found that the average of Turbidity and Suspended Solids value for both data results are quite similar while the Dissolved oxygen levels of R1a are higher than R1b;
- At the Tin Shui Wai Nullah, there are two water quality monitoring stations, TSR1 and TSR2, operated by EPD. The distance between Location R1b and TSR1 is about 1,000m and it is located at the upstream of Ha Tsuen Pumping Station. The frequency of sampling is once per month. According to EPD's monitoring records in 2007 and 2008 as measured at Location TSR1 (which is closer to R1b than TSR2), high value of Suspended Solids 110mg/L and Turbidity 80.3NTU and low value of DO concentration 3.9mg/L were recorded. In viewing of the EPD's data, the level of Suspended Solids and Turbidity monitoring result was generally higher than the data collected at Location R1a or R1b during the EM&A programme.

4.07 In conclusion, it is proposed to use the monitoring results of Location R1a as the Action and Limit levels establishment based on the following:

- The repeated baseline monitoring at Location R1b is impossible;
- The distance between both locations R1a and R1b is about 320m which should not have significant change in terms of the environmental performance criteria;
- Monitoring data at Location R1a is actual collected before Ha Tsuen Pumping Station construction commencement;
- The average, 95%ile and 99%ile values for Turbidity and Suspended Solids of Location R1a collected during 22 December 2009 to 18 January 2010 is quite similar to those collected at Location R1b while the average, 5%ile vales of DO of R1a is higher than that of R1b; and
- To set a more conservation Action/ Limit Levels for early detection of any impact on the water sensitive receiver, and in turn early remedial actions to be carried out, it is recommended to use the data set collect from 22 December 2009 to 18 January 2010 for establishment of the Action/ Limit Level;

4.08 The proposed Action and Limit Levels of water quality performance criteria is illustrated in below ***Table 4-3***.

Table 4-3 Action and Limit Levels for Water Quality Monitoring

Parameter	Environmental Performance Criteria	
	Action Level	Limit Level
DO in mg/L (mid-depth)	4.6	4 mg/L or 40% saturation at 15^{o}C
Turbidity in NTU (mid-depth)	15.6	16.2
SS in mg/L (mid-depth)	31.5	31.9

Notes: The Proposed Action levels of DO are adopted to be used 5%-ile of baseline data;
The Proposed Action/Limit Levels of Turbidity and SS are adopted to be used 95%-ile/99%-ile of baseline data; and
All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

Air Quality

4.09 The proposed air monitoring stations, such as Ho Tak Sum Primary School and Yeung Chun Pui Care & Attention Home, are already identified as a monitoring station under CEDD Contract No. CV/2008/03 and monitoring instrument was set in June 2009 also.

4.10 To be impartial established the environmental performance criteria for air quality under the Project. No other way, all monitoring data recorded between June 2009 to January 2010 include 24-hour TSP and 1-hour TSP extracted from CV/2008/03 are used for Action and Limit level establishment.

4.11 The results including 1-hour and 24-hour TSP extracted from CEDD Contract CV/2008/03 are shown in ***Table 4-4***. The detailed monitoring results data as provided by CSCE are attached in ***Annex G***.

Table 4-4 24-hour and 1-hour TSP Monitoring Results Extracted From CV/2008/03 (Period From 10 June 2009 to 18 January 2010

Date	24-hour TSP (μg/m^3)		Date	1-hour TSP (μg/m^3)					
				HTSPS (AM1)			YCPC (AM2)		
	HTSPS (AM1)	YCPC (AM2)		1st Meas.	2nd Meas.	3rd Meas.	1st Meas.	2nd Meas.	3rd Meas.
10-06-09	40	35	10-06-09	32	47	34	42	57	51
11-06-09	46	38	11-06-09	48	63	38	62	42	50
12-06-09	33	40	12-06-09	46	56	72	49	60	63
13-06-09	43	42	13-06-09	52	66	41	38	45	40
14-06-09	25	37	14-06-09	32	53	48	71	82	52
15-06-09	22	43	15-06-09	47	63	67	63	74	57
16-06-09	103	219	16-06-09	63	47	39	77	96	70
17-06-09	58	108	17-06-09	50	76	64	84	67	59
18-06-09	17	121	18-06-09	77	82	67	52	66	54
19-06-09	42	77	19-06-09	94	77	63	40	67	84
20-06-09	55	86	20-06-09	67	86	49	63	46	71
21-06-09	33	65	21-06-09	41	68	52	48	53	69
22-06-09	20	59	22-06-09	70	64	84	68	77	50
23-06-09	19	68	23-06-09	61	48	73	97	80	63
06-08-09	40	71	01-08-09	102	104	102	109	110	108
12-08-09	32	57	07-08-09	95	106	101	158	165	162
18-08-09	52	97	13-08-09	48	48	49	58	56	56
24-08-09	92	196	19-08-09	103	108	105	102	106	104
29-09-09	20	131	25-08-09	62	70	67	77	86	83

Date	24-hour TSP (μg/m³)		Date	1-hour TSP (μg/m³)					
	HTSPS (AM1)	YCPC (AM2)		HTSPS (AM1)			YCPC (AM2)		
				1st Meas.	2nd Meas.	3rd Meas.	1st Meas.	2nd Meas.	3rd Meas.
04-09-09	65	147	31-08-09	38	46	42	39	46	43
10-09-09	69	272	05-09-09	76	86	84	80	89	87
16-09-09	33	69	11-09-09	65	83	74	72	101	85
22-09-09	65	104	17-09-09	92	112	104	79	92	87
28-09-09	55	132	23-09-09	95	136	121	91	113	108
06-10-09	76	82	29-09-09	62	78	75	57	74	69
12-10-09	37	90	07-10-09	87	102	93	93	124	111
17-10-09	48	176	13-10-09	72	88	86	81	97	91
23-10-09	115	106	19-10-09	162	182	178	170	193	187
30-10-09	46	70	24-10-09	273	281	287	268	282	288
05-11-09	125	126	31-10-09	94	127	116	107	120	118
11-11-09	47	54	06-11-09	84	121	113	122	138	137
17-11-09	32	**invalid**	12-11-09	88	107	102	93	121	118
23-11-09	76	103	18-11-09	72	85	81	82	94	90
28-11-09	50	113	24-11-09	79	87	85	86	97	94
04-12-09	115	102	30-11-09	84	96	93	104	115	115
10-12-09	35	58	05-12-09	84	98	95	102	114	112
16-12-09	36	68	11-12-09	89	97	94	94	103	97
22-12-09	38	82	17-12-09	72	84	83	82	91	90
28-12-09	48	62	23-12-09	89	97	94	104	110	109
06-01-10	21	58	29-12-09	84	100	96	100	107	105
12-01-10	27	47	07-01-10	71	82	80	80	89	87
			13-01-10	94	107	103	106	117	114
Average (Range)	**50 (17–125)**	**93 (35–274)**	Average (Range)	**85 (32 – 287)**			**92 (38 – 288)**		

Remarks:
HTSPS - Ho Tak Sum Primary School
YCPC - Yeung Chun Pui Care & Attention Home

4.12 Based on the air quality monitoring results extracted from CEDD Contract CV/2008/03, following the criteria shown in Table 2-7 in this report, the proposed Action and Limit Levels for 24-hour and 1-hour TSP are illustrated in ***Table 4-5***.

Table 4-5 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action Level (μg /m³)		Limit Level (μg/m³)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AM1 - Ho Tak Sum Primary School	305	162	> 500	> 260
AM2 - Yeung Chun Pui Care & Attention Home	310	190	> 500	> 260

*Note: 1-hour & 24-hour TSP Action Level = (Ave. results extracted from CV/2008/03)*1.3 + Limit level)/2*

Noise

4.13 Same as air quality, the noise monitoring results between 10 June 2009 and 18 January 2010 extracted from CEDD Contract CV/2008/03 as provided by CSCE, are summarized in ***Table 4-6*** and detailed measurement data are shown in ***Annex G***.

Table 4-6 Summaries of Noise Monitoring Results dB(A)

Time Period	*NM1 - Ho Tak Sum Primary School			*NM2 - Yeung Chun Pui Care & Attention Home		
	Min.	Max.	Ave.	Min.	Max.	Ave.
Daytime of normal weekday (Monday to Saturday) 0700-1900 (Leq_{30min})	56.3	76.8	68.3	57.1	77.4	64.7
Restrict Hour at evening (Monday to Sunday) 1900-2300 (Leq_{15min}) on all other days	57.9	74.2	62.2	53.6	67.2	57.9
Restrict Hour at nighttime (Monday to Sunday) 2300-0700 of next day (Leq_{15min})	55.2	84.9	59.2	49.3	87.1	55.2
Daytime of Sunday or Holiday 0700 – 1900 (Leq_{15min})	56.2	84.9	64.8	57.4	73.4	61.3

Note: Figures in cells refer to the measurement recorded at the designated station during the entire baseline period for general reference.

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

4.14 Information extracted from CV/2008/03, during baseline monitoring, bad weather such as squally thunderstorms and raining were normal happened at night time.

Action/Limit Levels for Noise

4.15 The Action and Limit Levels for construction noise are illustrated in ***Table 4-7***.

Table 4-7 Action and Limit Levels of Construction Noise Monitoring

Monitoring Location	Action Level	Limit Level in dB(A)
	0700-1900 hrs on normal weekdays	
NM1 - Ho Tak Sum Primary School	When one or more documented complaints are received	• 70 dB(A) of Leq(30min) during normal hours; and • 65 dB(A) of Leq(30min) during school examination periods
NM2 - Yeung Chun Pui Care & Attention Home		70 dB(A) of Leq(30min) during normal hours

4.16 The data extracted from CEDD Contract CV/2008/03 between 10 June 2009 and 18 January 2010 will be used to compare the construction noise level during the construction phase.

DISCUSSION

Air Quality

Possible Influence of Seasonal Changes

4.17 Although the results extracted from CV/2008/03 are covered both wet and dry season (10 June 2009 – 18 January 2010), the action level would be regularly reviewed in accordance with the EM&A Manual requirement.

Water Quality

Environmental Performance Criteria of DO, SS, and turbidity

4.18 The baseline results of suspended solids (SS) and turbidity levels reflect the typical water quality at monitoring locations during dry seasons (November to April next year). The established environmental performance criteria, i.e. Action & Limit Levels, are therefore applicable to the Event and Action Plan in Hong Kong during dry season immediately prior to the commencement of the construction activities of the Project. Similarly, this applies to dissolved oxygen (DO) which is influenced by the same seasonable changes as SS and turbidity.

4.19 It is important to point out that the baseline SS and turbidity conditions at the monitoring locations may differ significantly during summer, in particular under high tide flow conditions. Therefore, it is recommended to regularly review the water quality baseline conditions, in particular during season changes. The environmental performance criteria may need to be re-established if it is evident that the baseline conditions have changed significantly. An updated baseline data should then be sought for re-establishment of the updated environmental performance criteria for the Event and Action Plan to be smoothly implemented.

5 CONCLUSIONS AND RECOMMENTATIONS

5.01 The baseline water quality monitoring was carried out during the period between 22 December 2009 and 18 January 2010 at the initially proposal monitoring location R1a by the ET according to the EM&A Manual. During the baseline water monitoring, there were no construction activities undertaken under this Project. A Master Construction Program of the Project is provided in ***Annex H***.

5.02 As establish the Action and Limit Levels of air quality monitoring including 1-hour & 24-hour TSP under the Project, the monitoring data results were extracted from CV/2008/03 monitoring results between 10 June 2009 and 18 January 2010. Also same period of construction noise monitoring results will be use during the construction phase as a reference.

5.03 The recommended environmental performance criteria for air quality, construction noise and a local stream water quality are summarized as follows.

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AM1 - Ho Tak Sum Primary School	305	162	> 500	> 260
AM2 - Yeung Chun Pui Care & Attention Home	310	190	> 500	> 260

Monitoring Location	Action Level	Limit Level
	0700-1900 hours on normal weekdays	
NM1 - Ho Tak Sum Primary School	When one or more documented complaints are received	• 70 dB(A) of Leq(30min) during normal hours; and • 65 dB(A) of Leq(30min) during school examination periods
NM2 - Yeung Chun Pui Care & Attention Home		70 dB(A) of Leq(30min) during normal hours

Monitoring Location	DO (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
R1b	4.6	4 mg/L or 40% saturation at 15 ^{o}C	15.6	16.2	31.5	31.9

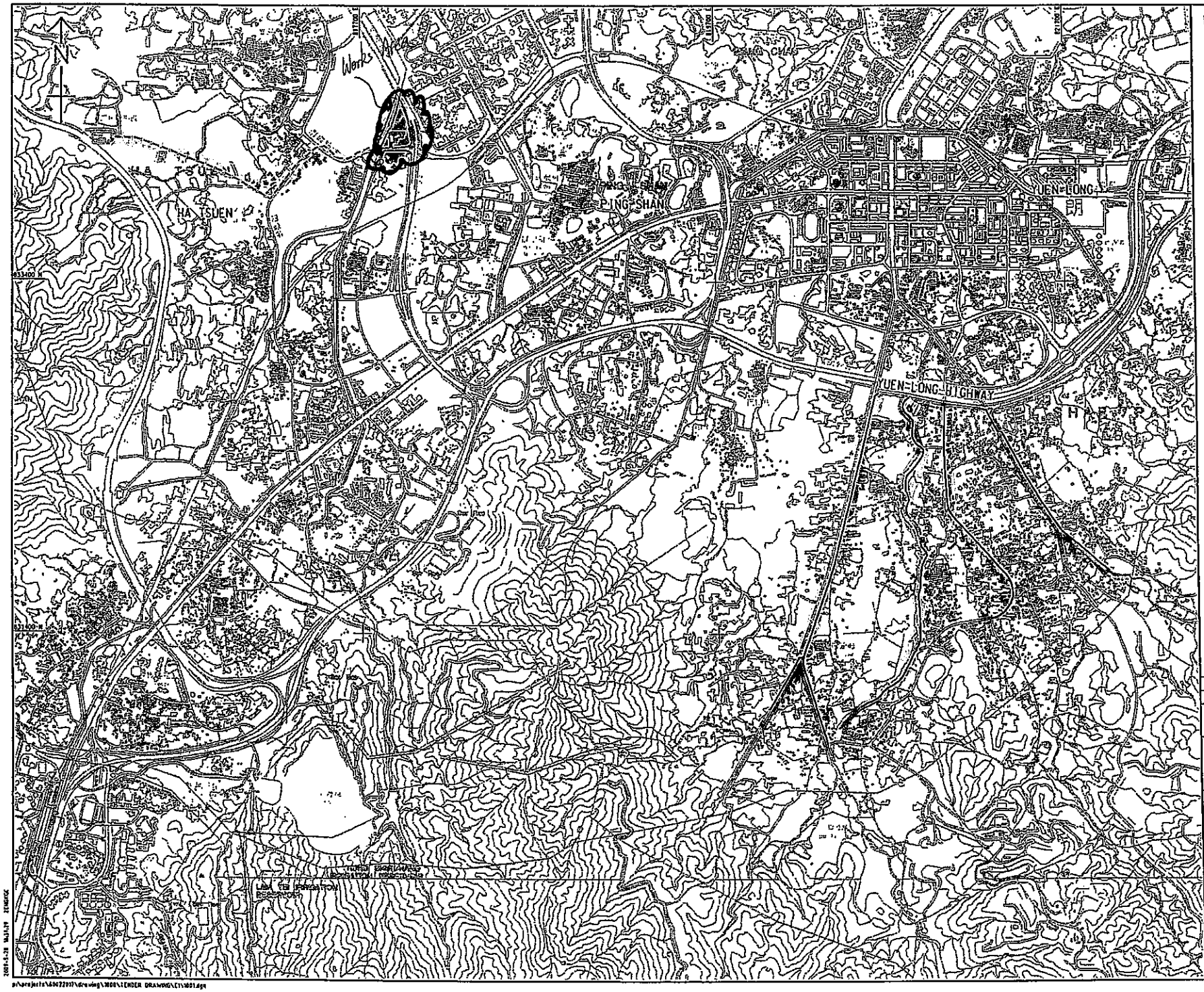
5.04 The initial tree survey related to landscape and visual impact monitoring was undertaken by others. The initial tree survey report will be submitted separately as a stand-alone document.

RECOMMENDATIONS

5.05 The baseline monitoring of water quality was conducted during typical dry season (November to April next year) in Hong Kong. It is important to note that influence of seasonal changes should be taken into account when interpreting monitoring data obtained during wet season. Review of the baseline conditions may need to be conducted regularly, in particular during seasonal changes. If the changes in baseline conditions are evident, the environmental performance criteria should be re-established by agreement of the ER and IEC and submitted for EPD endorsement.

Annex A

Location Plans of the Project



LEGEND:

- SEWERAGE PIPE
- RISING MAIN
- SEWAGE PUMPING STATION

-	TENDER DRAWING	DSD/ACTS	05.09

DRAINAGE SERVICES DEPARTMENT,
THE GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION

YUEN LONG AND KAM TIN SEWERAGE AND SEWAGE DISPOSAL - CONSTRUCTION OF YUEN LONG SOUTH BRANCH SEWERS AND EXPANSION OF HA TSUEN SEWAGE PUMPING STATION

LOCATION PLAN

AECOM

DRG NO. 60022017/C1/1001

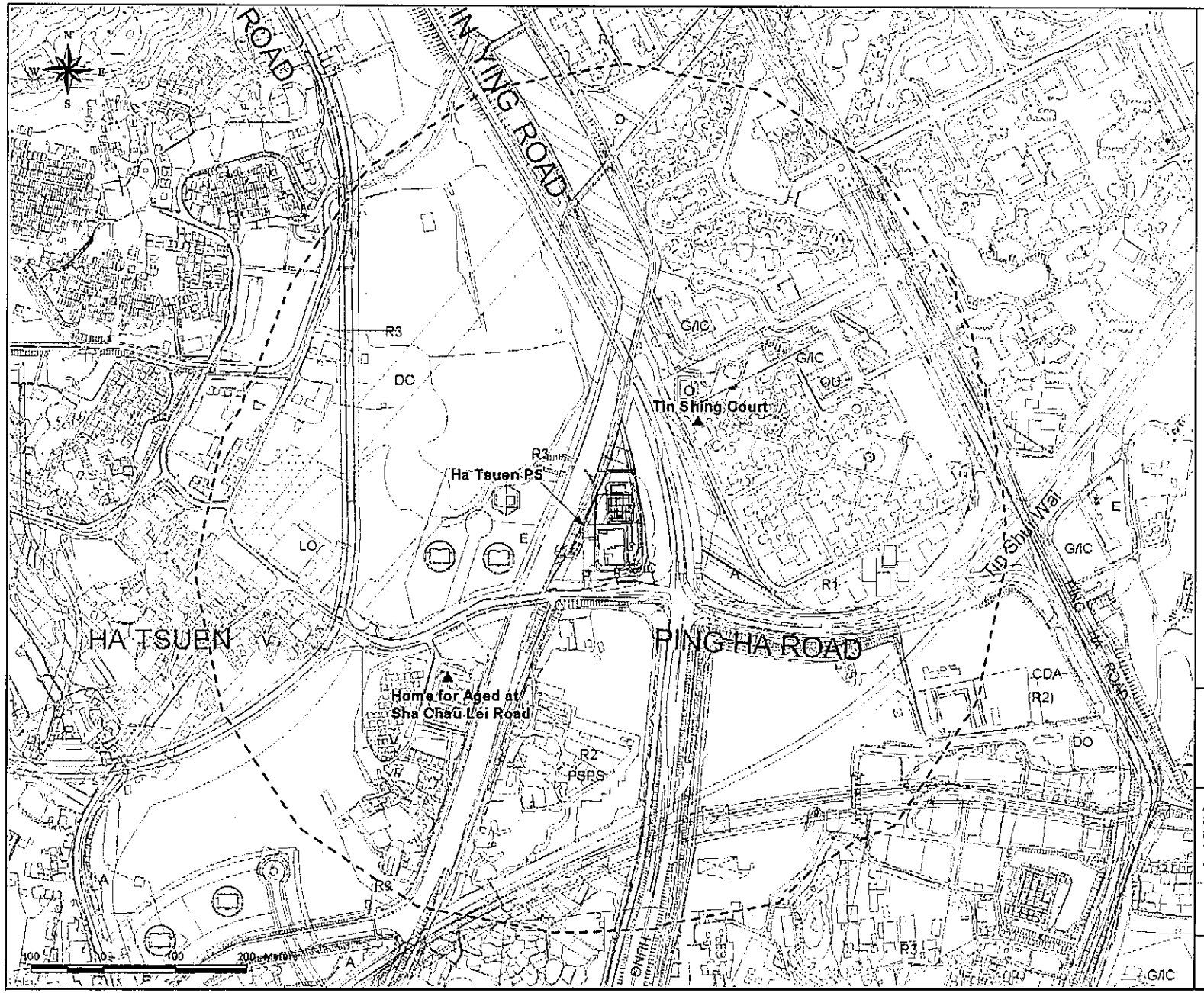
CONTRACT NO. DC/2009/08

SCALE AT A1 1 : 10000

UNITS METRES

Annex B

Monitoring Locations Designated in the EM&A Manual



LEGEND:

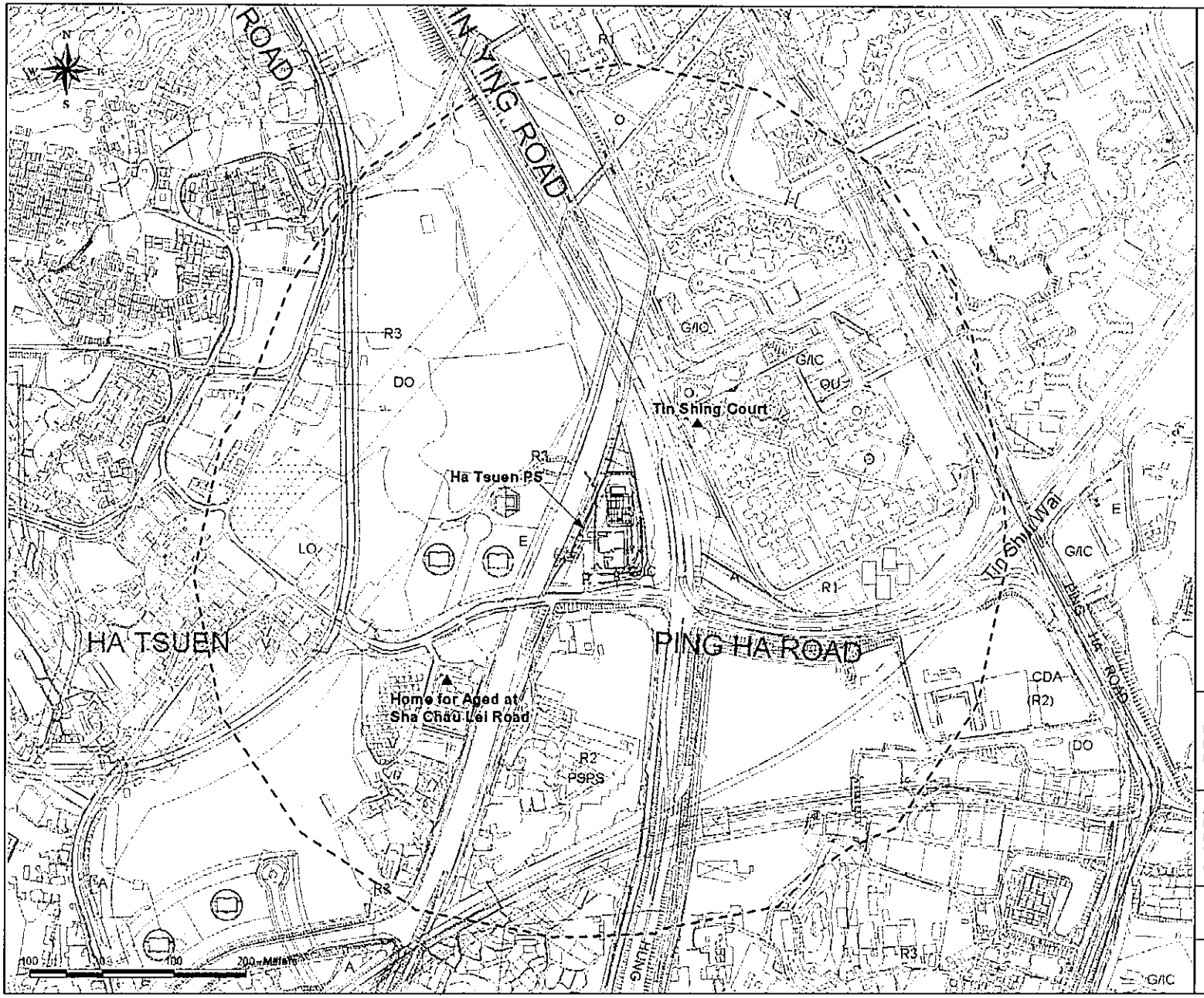
▲ Locations of Dust Monitoring Locations

Figure 2.2
Proposed Dust Monitoring Locations for Ha Tsuen PS

Agreement No. CE62/2000
EIA Study for the Upgrading and Expansion of San Wai Sewage Treatment Works and the Expansion of Ha Tsuen Pumping Station

MWH
MONTGOMERY WATSON HARZA

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



LEGEND:

▲ Locations of Noise Monitoring Locations

Figure 3.2
Proposed Noise Monitoring Locations for Ha Tsuen PS

Agreement No. CE62/2000
EIA Study for the Upgrading and Expansion of San Wai Sewage Treatment Works and the Expansion of Ha Tsuen Pumping Station

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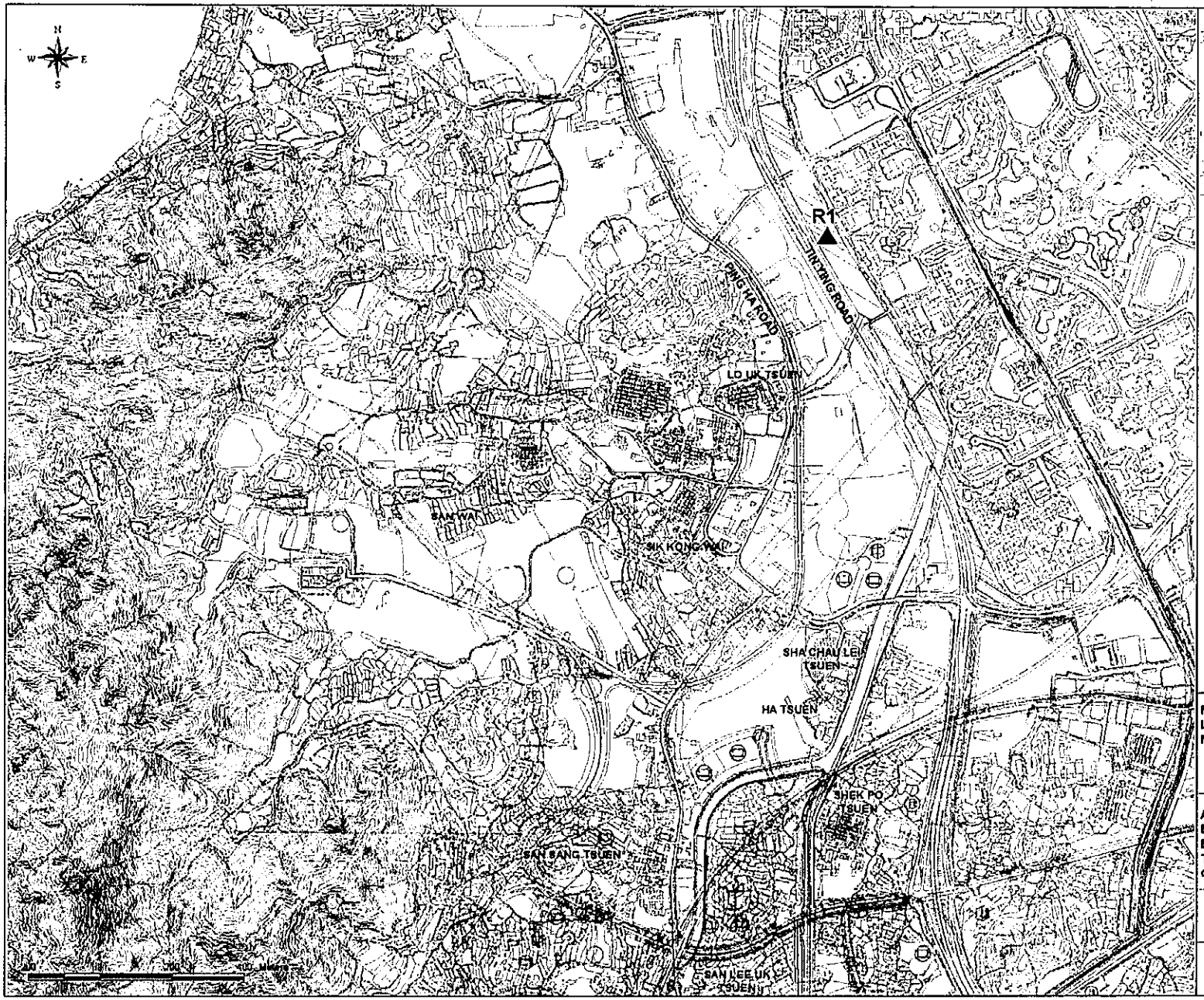
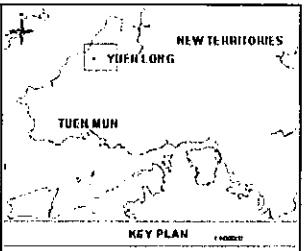
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION





LEGEND:

R1 ▲ LOCATIONS OF RIVER WATER QUALITY MONITORING STATIONS

Figure 4.2
Locations of River Water Quality Monitoring Stations

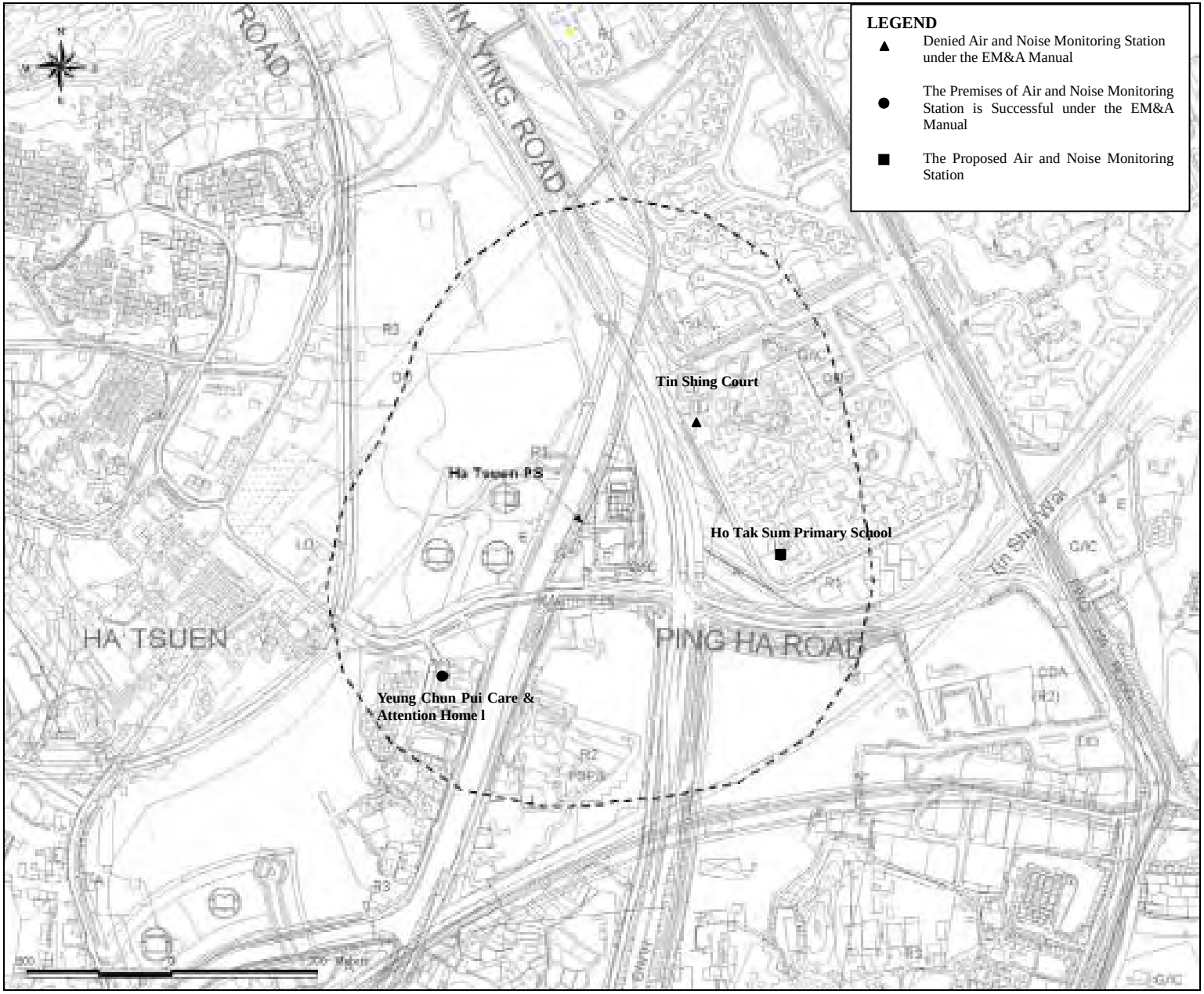
Agreement No. CE62/2000
EIA Study for the Upgrading and Expansion of San Wai Sewage Treatment Works and the Expansion of Ha Tsuen Pumping Station

MWH
MONTGOMERY WATSON HARZA

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

Annex C

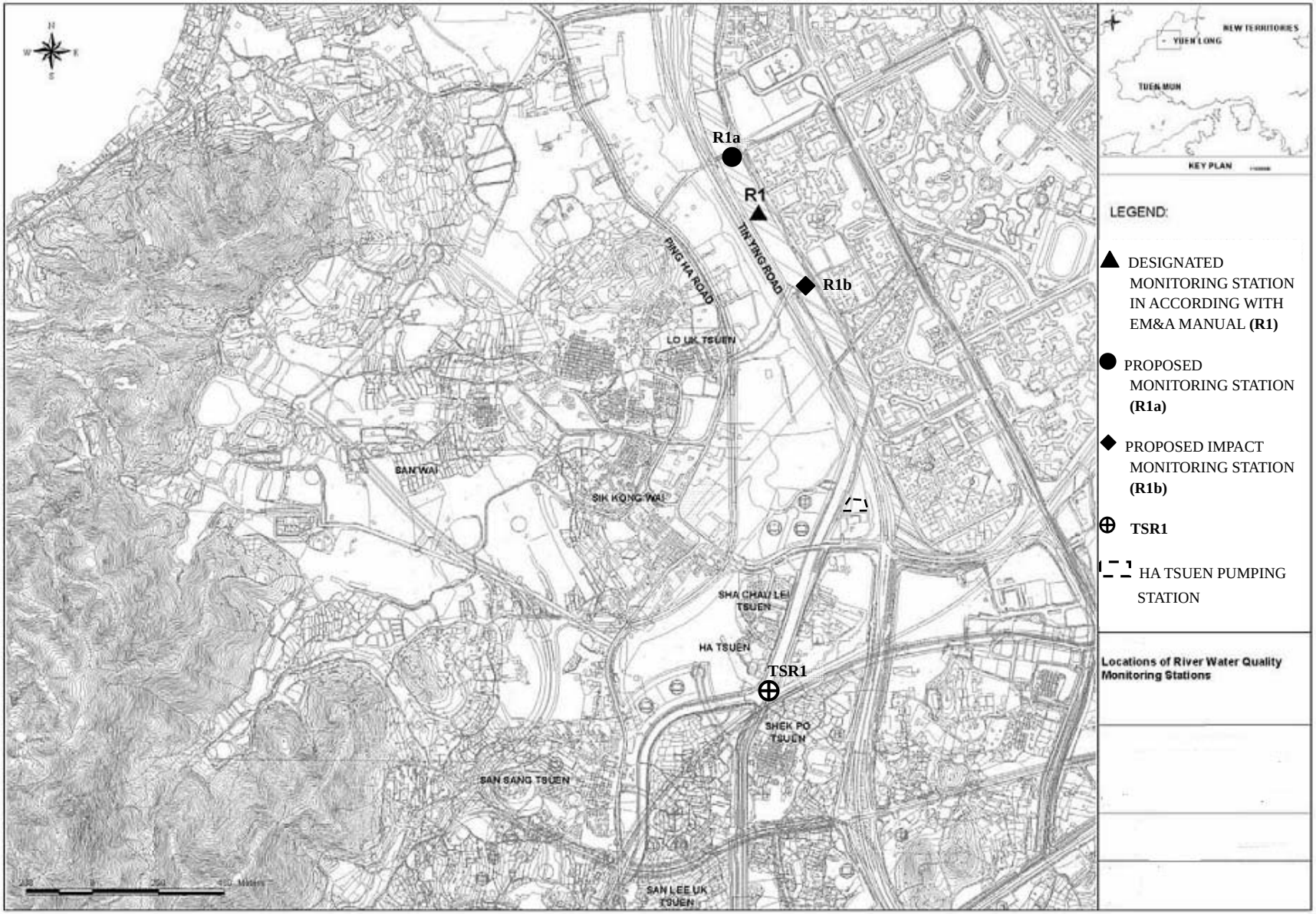
Proposed Monitoring Stations under the Project


LEGEND
Denied Air and Noise Monitoring Station under the EM&A Manual
The Premises of Air and Noise Monitoring Station is Successful under the EM&A Manual
The Proposed Air and Noise Monitoring Station
Tin Shing Court
Ha Tsuen PS
Ho Tak Sum Primary School
Yeung Chun Pui Care & Attention Home l
HA TSUEN
PING HA ROAD
IN YING ROAD

DSD Contract No. DC/2009/08 – Construction of Yuen Long South Branch Sewers And Extension of Ha Tsuen Sewage Pumping Station

Proposed Water Quality Monitoring Location

AUES



Annex D

Availed Calibration Certificates and Laboratory Certificate

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092064

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator (EQ017)

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2292168

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092064.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 28 April 2009

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092064

Calibration Report

ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ017)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 4231
SERIAL NO. : 2292168

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration

DATE OF TEST : 27 April 2009 ***JOB NO.*** : IC09-0962

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by : *H C Chan* *Date : 28 April 2009*

Report No. : C092064

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C083083
CL281	Multifunction Acoustic Calibrator	DC090052
TST150A	Measuring Amplifier	C080751

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Measurement

UUT Nominal Value	Measured Value (dB)		Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
	Before Adjustment	After Adjustment		
94 dB, 1 kHz	93.8	94.0	± 0.2	± 0.2
114 dB, 1 kHz	113.9	114.1		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)		Mfr's Spec.	Uncertainty of Measured Value (Hz)
	Before Adjustment	After Adjustment		
1	1.000 0	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092085

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ006)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285762

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092085.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 30 April 2009

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092085

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ006)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285762

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 28 April 2009 ***JOB NO.*** : IC09-0962

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by : *H C Chan* *Date* : *30 April 2009*

Report No. : C092085

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B&K acoustic calibrator 4231, S/N 2326408 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.1	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)	
40 - 120	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.1

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.1	± 0.1
	L_{AIP}		I			94.1	± 0.1

Report No. : C092085

Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.00	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{AFP}	A	F	94.00	31.5 Hz	54.8	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	88.5	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{CFP}	C	F	94.00	31.5 Hz	91.2	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.7	-0.2 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	86.6	-6.2 (+3.0 ; -6.0)

Report No. : C092085

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Freq. Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
30 - 110	Leq	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	89.7	± 0.5
			60 sec.			$1/10^3$		80	79.3	± 1.0
			5 min.			$1/10^4$		70	69.2	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092112

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ008)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285690

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092112.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 30 April 2009

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092112

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ008)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285690

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 28 April 2009 ***JOB NO.*** : IC09-0962

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by : *H C Chan* *Date : 30 April 2009*

Report No. : C092112

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B&K acoustic calibrator 4231, S/N 2326408 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)	
40 - 120	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.0

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

Report No. : C092112

Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.00	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{AFP}	A	F	94.00	31.5 Hz	55.1	-39.4 ± 1.5
					63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.0	-16.1 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.3	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.5	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{CFP}	C	F	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.5	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.4	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.5	-6.2 (+3.0 ; -6.0)

Report No. : C092112

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Freq. Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	Leq	A	10 sec.	4	1	1/10	110.0	100	99.8	± 0.5
						$1/10^2$		90	89.7	± 0.5
			60 sec.			$1/10^3$		80	79.8	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092113

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ009)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285722

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092113.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 30 April 2009

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092113

Calibration Report

ITEM TESTED

DESCRIPTION	:	Integrating Sound Level Meter (EQ009)
MANUFACTURER	:	Bruel & Kjaer
MODEL NO.	:	2238
SERIAL NO.	:	2285722

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%

LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 28 April 2009 ***JOB NO.*** : IC09-0962

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by : *H C Chan* *Date : 30 April 2009*

Report No. : C092113

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B&K acoustic calibrator 4231, S/N 2292168 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)	
40 - 120	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.0

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

Report No. : C092113

Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.00	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{AFP}	A	F	94.00	31.5 Hz	54.9	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	78.0	-16.1 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.1	+1.2 ± 1.0
					4 kHz	94.8	+1.0 ± 1.0
					8 kHz	92.6	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.0	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{CFP}	C	F	94.00	31.5 Hz	91.2	-3.0 ± 1.5
					63 Hz	93.4	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.7	-0.2 ± 1.0
					4 kHz	93.0	-0.8 ± 1.0
					8 kHz	90.7	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.1	-6.2 (+3.0 ; -6.0)

Report No. : C092113

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Freq. Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
30 - 110	Leq	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	79.5	± 1.0
			5 min.			$1/10^4$		70	69.3	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092111

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ010)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285721

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092111.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 30 April 2009

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092111

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ010)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285721

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 28 April 2009 ***JOB NO.*** : IC09-0962

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by : *H C Chan* *Date : 30 April 2009*

Report No. : C092111

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B&K acoustic calibrator 4231, S/N 2292168 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)	
40 - 120	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.0	± 0.1

Report No. : C092111

Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.00	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{AFP}	A	F	94.00	31.5 Hz	55.0	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.0
					500 Hz	90.6	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.5	+1.0 ± 1.0
					8 kHz	91.6	-1.1 (+1.5 ; -3.0)
					12.5 kHz	86.6	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{CFP}	C	F	94.00	31.5 Hz	91.2	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	93.9	Ref.
					2 kHz	93.6	-0.2 ± 1.0
					4 kHz	92.7	-0.8 ± 1.0
					8 kHz	89.8	-3.0 (+1.5 ; -3.0)
					12.5 kHz	84.7	-6.2 (+3.0 ; -6.0)

Report No. : C092111

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Freq. Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
30 - 110	Leq	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	79.4	± 1.0
			5 min.			$1/10^4$		70	69.4	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Annex E

Schedule of Baseline Monitoring

Schedule of Baseline a Local Stream Monitoring

Date			Water
First Week	Tue	22-Dec-09	
	Wed	23-Dec-09	
	Thu	24-Dec-09	
	Fri	25-Dec-09	
	Sat	26-Dec-09	
	Sun	27-Dec-09	
	Mon	28-Dec-09	
Second Week	Tue	29-Dec-09	
	Wed	30-Dec-09	
	Thu	31-Dec-09	
	Fri	1-Jan-09	
	Sat	2-Jan-09	
	Sun	3-Jan-09	
	Mon	4-Jan-09	
Third Week	Tue	5-Jan-09	
	Wed	6-Jan-09	
	Thu	7-Jan-09	
	Fri	8-Jan-09	
	Sat	9-Jan-09	
	Sun	10-Jan-09	
	Mon	11-Jan-09	
Forth Week	Tue	12-Jan-09	
	Wed	13-Jan-09	
	Thu	14-Jan-09	
	Fri	15-Jan-09	
	Sat	16-Jan-09	
	Sun	17-Jan-09	
	Mon	18-Jan-09	

	Monitoring Day
	Sunday or Public Holiday

Annex F

Laboratory Result Reports

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0927532
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00491_08	Quote number	: HK/1291a/2009 **	Date Samples Received	: 23-DEC-2009
Order number	: ----			Issue Date	: 30-DEC-2009
C-O-C number	: H010536			No. of samples received	: 1
Site	: ----			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 28-DEC-2009

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK0927532**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: WATER			Client sample ID	R1				
			Client sampling date / time	[22-DEC-2009]				
Compound	CAS Number	LOR	Unit	HK0927532-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**31**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1207226)								
HK0927530-004	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	5	4	0.0
HK0927530-012	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	4	5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1207226)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	85.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1000137
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00467_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 28-DEC-2009
Order number	: ----			Issue Date	: 08-JAN-2010
C-O-C number	: H010567			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 06-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1000137**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: WATER			Client sample ID	R1				
			Client sampling date / time	[24-DEC-2009]				
Compound	CAS Number	LOR	Unit	HK1000137-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**30**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1212713)								
HK1000114-002	Anonymous	**EA025: Suspended Solids (SS)**	----	3	mg/L	233	264	12.2
HK1000119-002	Anonymous	**EA025: Suspended Solids (SS)**	----	3	mg/L	7	8	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1212713)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	88.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1000139
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00467_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 30-DEC-2009
Order number	: ----			Issue Date	: 08-JAN-2010
C-O-C number	: H010568			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 06-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1000139**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: WATER			Client sample ID	R1				
			Client sampling date / time	[28-DEC-2009]				
Compound	CAS Number	LOR	Unit	HK1000139-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**8**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1212713)								
HK1000114-002	Anonymous	**EA025: Suspended Solids (SS)**	----	3	mg/L	233	264	12.2
HK1000119-002	Anonymous	**EA025: Suspended Solids (SS)**	----	3	mg/L	7	8	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1212713)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	88.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0927874
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00467_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 30-DEC-2009
Order number	: ----			Issue Date	: 06-JAN-2010
C-O-C number	: H010556			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 04-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK0927874**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID				
				R1				
				Client sampling date / time				
				[30-DEC-2009]				
				HK0927874-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**23**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1210501)								
HK0927873-004	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	4	0.0
HK0927876-002	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1210501)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MS JAN KWOK**	*Contact*	: **Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1000458**		
Address	: **RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	: **11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**				
E-mail	: **Jankwok@fordbusiness.com**	*E-mail*	: **Godfrey.Chan@alsenviro.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00467_09**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **05-JAN-2010**		
Order number	: **----**			*Date of issue*	: **13-JAN-2010**		
C-O-C number	: **H010573**			*No. of samples*	- *Received* :	**1**	
Site	: **PING HA ROAD III**				- *Analysed* :	**1**	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1000458 supersedes any previous reports with this reference. The completion date of analysis is 08-JAN-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1000458 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Water sample(s) digested by In-house method E-3005 based on USEPA method 3005, prior to the determination of total metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EA025: Suspended Solids (SS)**				
			LOR Unit	2 mg/L				
			EA/ED: Physical and Aggregate Properties					
R1	[02-JAN-2010]	HK1000458-001		**15**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1215007)								
HK1000443-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	70	78	10.7
HK1000462-002	Anonymous	EA025: Suspended Solids (SS)	----	3	mg/L	4	5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1215007)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	87.5	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MS JAN KWOK**	*Contact*	: **Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1000460**		
Address	: **RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	: **11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**				
E-mail	: **Jankwok@fordbusiness.com**	*E-mail*	: **Godfrey.Chan@alsenviro.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00467_09**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **05-JAN-2010**		
Order number	: **----**			*Date of issue*	: **13-JAN-2010**		
C-O-C number	: **H010574**			*No. of samples*	- *Received* :	**1**	
Site	: **PING HA ROAD**				- *Analysed* :	**1**	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1000460 supersedes any previous reports with this reference. The completion date of analysis is 08-JAN-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1000460 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Water sample(s) digested by In-house method E-3005 based on USEPA method 3005, prior to the determination of total metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

	Compound	**EA025: Suspended Solids (SS)**				
	LOR Unit	2 mg/L				
Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	EA/ED: Physical and Aggregate Properties				
R1	[04-JAN-2010]	HK1000460-001	**21**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1215007)								
HK1000443-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	70	78	10.7
HK1000462-002	Anonymous	EA025: Suspended Solids (SS)	----	3	mg/L	4	5	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1215007)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	87.5	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1000615		
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong				
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com				
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044				
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021				
Project	: TCS00467_09	Quote number	: HK/1291a/2009 **	Date received	: 07-JAN-2010		
Order number	: ----			Date of issue	: 13-JAN-2010		
C-O-C number	: H010577			No. of samples	- Received	:	1
Site	: PING HA ROAD				- Analysed	:	1

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1000615 supersedes any previous reports with this reference. The completion date of analysis is 12-JAN-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1000615 : **Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.**
Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EA025: Suspended Solids (SS)**				
			LOR Unit	2 mg/L				
			EA/ED: Physical and Aggregate Properties					
R1	[06-JAN-2010]	HK1000615-001		**31**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1216582)								
HK1000611-011	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1000615-001	R1	EA025: Suspended Solids (SS)	----	2	mg/L	31	33	7.2

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1216582)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	85.5	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1000750
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00467_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 09-JAN-2010
Order number	: ----			Issue Date	: 14-JAN-2010
C-O-C number	: H010585			No. of samples received	: 1
Site	: PING HA ROAD II			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 13-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1000750**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: R1				
				Client sampling date / time: [08-JAN-2010]				
				HK1000750-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**32**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1217727)								
HK1000538-003	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	2	0.0
HK1000620-003	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	174	175	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1217727)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	87.5	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MS JAN KWOK**	*Contact*	: **Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1000978**		
Address	: **RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	: **11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**				
E-mail	: **Jankwok@fordbusiness.com**	*E-mail*	: **Godfrey.Chan@alsenviro.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00502_09**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **12-JAN-2010**		
Order number	: **----**			*Date of issue*	: **18-JAN-2010**		
C-O-C number	: **H010595**			*No. of samples*	- *Received* :	**1**	
Site	: **PING HA ROAD II**				- *Analysed* :	**1**	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1000978 supersedes any previous reports with this reference. The completion date of analysis is 15-JAN-2010. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1000978 :

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Water sample(s) digested by In-house method E-3005 based on USEPA method 3005, prior to the determination of total metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**			*Compound*	**EA025: Suspended Solids (SS)**				
			LOR Unit	2 mg/L				
Client sample ID	*Client sampling date / time*	*Laboratory sample ID*		EA/ED: Physical and Aggregate Properties				
R1	[11-JAN-2010]	HK1000978-001		**22**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1219861)								
HK1000977-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	22	20	7.6
HK1000996-006	Anonymous	EA025: Suspended Solids (SS)	----	2.0	mg/L	2.5	3.1	21.3

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1219861)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1001370
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00491_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 14-JAN-2010
Order number	: ----			Issue Date	: 22-JAN-2010
C-O-C number	: H011801			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 20-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1001370**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: R1				
				Client sampling date / time: [13-JAN-2010]				
				HK1001370-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**27**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1223546)								
HK1001326-003	Anonymous	**EA025: Suspended Solids (SS)**	----	1	mg/L	27	24	14.0
HK1001365-002	Anonymous	**EA025: Suspended Solids (SS)**	----	3	mg/L	201	200	0.7

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1223546)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1001457
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00491_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 19-JAN-2010
Order number	: ----			Issue Date	: 22-JAN-2010
C-O-C number	: H011802			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 21-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1001457**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

Water sample(s) digested by In-house method E-3005 based on USEPA method 3005, prior to the determination of total metals.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: WATER			Client sample ID	R-1				
			Client sampling date / time	[15-JAN-2010]				
Compound	CAS Number	LOR	Unit	HK1001457-001				
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)	----	2	mg/L	**21**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1225596)								
HK1001450-008	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	4	0.0
HK1001451-006	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	4	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1225596)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	86.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MS JAN KWOK	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1001455
Address	: RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Jankwok@fordbusiness.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00491_09	Quote number	: HK/1291a/2009 **	Date Samples Received	: 19-JAN-2010
Order number	: ----			Issue Date	: 22-JAN-2010
C-O-C number	: H011807			No. of samples received	: 1
Site	: PING HA ROAD			No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 21-JAN-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1001455**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: WATER	Client sample ID	R-1				
	Client sampling date / time	[18-JAN-2010]				
Compound / CAS Number	LOR / Unit	HK1001455-001				
EA/ED: Physical and Aggregate Properties						
EA025: Suspended Solids (SS) ----	2 mg/L	**31**				

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1225596)								
HK1001450-008	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	4	0.0
HK1001451-006	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	4	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 1225596)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	86.0	----	85	115	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

Annex G

Monitoring Results Data Extracted For DC/2008/03

1-Hr TSP Data

Yeung Chun Pui Care & Attention Home				
Date	Start Time	1st Hour	2nd Hour	3rd Hour
10-Jun-09	09:20	42	57	51
11-Jun-09	09:15	62	42	50
12-Jun-09	09:20	49	60	63
13-Jun-09	09:10	38	45	40
14-Jun-09	09:40	71	82	52
15-Jun-09	09:50	63	74	57
16-Jun-09	14:00	77	96	70
17-Jun-09	14:30	84	67	59
18-Jun-09	14:25	52	66	54
19-Jun-09	13:30	40	67	84
20-Jun-09	13:30	63	46	71
21-Jun-09	12:40	48	53	69
22-Jun-09	14:40	68	77	50
23-Jun-09	13:50	97	80	63
1-Aug-09	13:15	109	110	108
7-Aug-09	09:28	158	165	162
13-Aug-09	13:00	58	56	56
19-Aug-09	09:07	102	106	104
25-Aug-09	13:00	77	86	83
31-Aug-09	09:25	39	46	43
5-Sep-09	09:15	80	89	87
11-Sep-09	13:45	72	101	85
17-Sep-09	09:10	79	92	87
23-Sep-09	09:15	91	113	108
29-Sep-09	13:00	57	74	69
7-Oct-09	09:10	93	124	111
13-Oct-09	09:20	81	97	91
19-Oct-09	09:40	170	193	187
24-Oct-09	13:25	268	282	288
31-Oct-09	09:20	107	120	118
6-Nov-09	09:10	122	138	137
12-Nov-09	09:40	93	121	118
18-Nov-09	09:30	82	94	90
24-Nov-09	09:20	86	97	94
30-Nov-09	09:30	104	115	115
5-Dec-09	09:20	102	114	112
11-Dec-09	08:55	94	103	97
17-Dec-09	09:30	82	91	90
23-Dec-09	08:50	104	110	109
29-Dec-09	09:20	100	107	105
7-Jan-10	09:00	80	89	87
13-Jan-10	09:15	106	117	114

Lions Clubs International Ho Tak Sum Primary School				
Date	Start Time	1st Hour	2nd Hour	3rd Hour
10-Jun-09	09:45	32	47	34
11-Jun-09	09:40	48	63	38
12-Jun-09	09:50	46	56	72
13-Jun-09	09:35	52	66	41
14-Jun-09	10:20	32	53	48
15-Jun-09	10:25	47	63	67
16-Jun-09	14:35	63	47	39
17-Jun-09	15:00	50	76	64
18-Jun-09	14:50	77	82	67
19-Jun-09	14:05	94	77	63
20-Jun-09	14:00	67	86	49
21-Jun-09	13:05	41	68	52
22-Jun-09	15:15	70	64	84
23-Jun-09	14:25	61	48	73
1-Aug-09	13:00	102	104	102
7-Aug-09	09:07	95	106	101
13-Aug-09	13:15	48	48	49
19-Aug-09	09:04	103	108	105
25-Aug-09	13:30	62	70	67
31-Aug-09	09:05	38	46	42
5-Sep-09	09:07	76	86	84
11-Sep-09	13:50	65	83	74
17-Sep-09	09:30	92	112	104
23-Sep-09	09:10	95	136	121
29-Sep-09	13:30	62	78	75
7-Oct-09	09:05	87	102	93
13-Oct-09	08:25	72	88	86
19-Oct-09	09:00	162	182	178
24-Oct-09	13:05	273	281	287
31-Oct-09	09:05	94	127	116
6-Nov-09	09:00	84	121	113
12-Nov-09	09:00	88	107	102
18-Nov-09	08:55	72	85	81
24-Nov-09	08:45	79	87	85
30-Nov-09	08:50	84	96	93
5-Dec-09	08:55	84	98	95
11-Dec-09	08:30	89	97	94
17-Dec-09	08:55	72	84	83
23-Dec-09	08:30	89	97	94
29-Dec-09	10:00	84	100	96
7-Jan-10	08:25	71	82	80
13-Jan-10	08:25	94	107	103

Impact 24-Hour TSP Monitoring Results - Lions Clubs International Ho Tak Sum Primary School

DATE	SAMPLE NUMBER	ELAPSED TIME INITIAL	ELAPSED TIME FINAL	ELAPSED TIME (min)	MIN CHART READING	MAX CHART READING	AVG CHART READING	AVG TEMP (oC)	STANDARD			INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-Hr TSP IN AIR (ug/m^3)
									AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
10-Jun-09	SM01	6981.28	7005.42	1448.40	24	26	25.0	28.3	1006.4	0.91	1315	2.8351	2.8886	0.0535	40
11-Jun-09	SM42	7005.42	7029.06	1418.40	26	28	27.0	26.6	1005.4	0.95	1353	2.8418	2.9050	0.0632	46
12-Jun-09	SM53	7029.06	7052.70	1418.40	25	28	26.5	27.0	1005.2	0.94	1336	2.8331	2.8788	0.0457	33
13-Jun-09	SL12	7052.70	7076.82	1447.20	25	26	25.5	29.0	1005.4	0.92	1329	2.8298	2.8875	0.0577	43
14-Jun-09	SM54	7076.82	7099.83	1380.60	27	28	27.5	27.6	1005.3	0.96	1330	2.8652	2.8995	0.0343	25
15-Jun-09	SL15	7099.83	7123.56	1423.80	24	28	26.0	26.6	1005.6	0.93	1326	2.8600	2.8906	0.0306	22
16-Jun-09	SM38	7123.56	7147.54	1438.80	25	27	26.0	27.4	1006.8	0.93	1340	2.8375	2.9761	0.1386	103
17-Jun-09	020041	7147.97	7172.01	1442.40	25	29	27.0	28.8	1006.6	0.95	1373	2.8301	2.9107	0.0806	58
18-Jun-09	020040	7172.01	7195.24	1393.80	24	27	25.5	29.0	1004.4	0.92	1279	2.8281	2.8506	0.0225	17
19-Jun-09	020042	7195.24	7218.92	1420.80	25	29	27.0	29.1	1002.9	0.95	1350	2.8186	2.8769	0.0583	42
20-Jun-09	020084	7218.92	7242.23	1398.60	25	28	26.5	29.9	1002.4	0.94	1312	2.8266	2.8992	0.0726	55
21-Jun-09	020043	7242.23	7265.58	1401.00	26	30	28.0	30.1	1001.7	0.97	1360	2.8278	2.8735	0.0457	33
22-Jun-09	020086	7265.58	7289.96	1462.80	24	27	25.5	29.6	1003.7	0.92	1342	2.8305	2.8578	0.0273	20
23-Jun-09	020088	7289.96	7313.31	1401.00	26	28	27.0	29.8	1005.4	0.95	1332	2.8513	2.8774	0.0261	19
6-Aug-09	20316	7313.31	7336.61	1398.00	36	38	37.0	29.0	998.1	1.18	1645	2.8290	2.8973	0.0683	41
12-Aug-09	20369	7336.61	7359.89	1396.80	36	38	37.0	27.3	1005.7	1.18	1651	2.7765	2.8309	0.0544	32
18-Aug-09	20450	7359.89	7383.19	1398.00	36	38	37.0	28.7	1010.9	1.18	1653	2.8603	2.9481	0.0878	53
24-Aug-09	20418	7383.19	7406.53	1400.40	36	38	37.0	30.1	1008.6	1.18	1651	2.8812	3.0360	0.1548	93
29-Aug-09	20517	7406.53	7429.97	1406.40	36	38	37.0	30.4	1008.6	1.18	1658	2.8323	2.8671	0.0348	20
4-Sep-09	20556	7429.97	7453.37	1404.00	36	38	37.0	30.0	1005.3	1.18	1654	2.8496	2.9594	0.1098	66
10-Sep-09	20563	7453.37	7476.67	1398.00	36	38	37.0	28.8	1006.6	1.18	1650	2.8180	2.9340	0.1160	70
16-Sep-09	20621	7476.67	7499.93	1395.60	36	38	37.0	27.9	1010.2	1.18	1651	2.8128	2.8685	0.0557	33
22-Sep-09	20671	7499.93	7523.19	1395.60	37	38	37.5	28.2	1009.3	1.19	1666	2.8399	2.9500	0.1101	66
28-Sep-09	20517	7523.19	7546.51	1399.20	37	38	37.5	26.2	1004.8	1.19	1671	2.8279	2.9222	0.0943	56
6-Oct-09	20744	7546.51	7569.78	1396.20	36	38	37.0	28.4	1008.4	1.20	1669	2.8510	2.9795	0.1285	76
12-Oct-09	20773	7569.78	7593.05	1396.20	36	38	37.0	25.3	1014.1	1.20	1678	2.8578	2.9191	0.0613	37
17-Oct-09	20821	7593.05	7616.48	1405.80	36	38	37.0	26.5	1009.9	1.20	1685	2.8395	2.9212	0.0817	48
23-Oct-09	20907	7616.48	7640.78	1458.00	36	38	37.0	26.3	1011.3	1.20	1748	2.8456	3.0465	0.2009	115
30-Oct-09	20926	7640.78	7663.44	1359.60	36	38	37.0	24.8	1016	1.20	1636	2.8770	2.9530	0.0760	46
5-Nov-09	20912	7663.44	7686.74	1398.00	36	38	37.0	23.5	1019.3	1.21	1686	2.8221	3.0321	0.2100	125
11-Nov-09	20981	7686.74	7710.01	1396.20	36	38	37.0	26.2	1009.2	1.20	1673	2.8621	2.9389	0.0768	47
17-Nov-09	21052	7710.01	7733.23	1393.20	36	38	37.0	12.2	1021.4	1.22	1704	2.8642	2.9183	0.0541	32
23-Nov-09	21073	7733.03	7756.60	1414.20	36	38	37.0	18.8	1018.7	1.21	1715	2.8700	3.0015	0.1315	76
28-Nov-09	21094	7756.60	7780.00	1404.00	36	38	37.0	21.1	1018.8	1.21	1698	2.7833	2.8677	0.0844	50
4-Dec-09	21124	7780.00	7803.12	1387.20	36	38	37.0	17.6	1019.8	1.21	1685	2.8976	3.0937	0.1961	116
10-Dec-09	21139	7803.12	7826.94	1429.20	36	38	37.0	20.3	1015.8	1.21	1728	2.8570	2.9185	0.0615	36
16-Dec-09	21199	7826.94	7850.53	1415.40	36	38	37.0	13.9	1021.3	1.22	1728	2.8874	2.9508	0.0634	37
22-Dec-09	21202	7850.53	7874.34	1428.60	36	38	37.0	16.0	1022.1	1.23	1758	2.9172	2.9836	0.0664	38
28-Dec-09	21252	7874.34	7898.15	1428.60	36	38	37.0	12.2	1018.4	1.23	1764	2.8898	2.9747	0.0849	48
6-Jan-10	21290	7898.15	7921.99	1430.40	36	38	37.0	15.8	1018.6	1.23	1759	2.9175	2.9539	0.0364	21
12-Jan-10	21320	7921.99	7945.41	1405.20	36	38	37.0	12.1	1023	1.24	1738	2.7335	2.7807	0.0472	27

Impact 24-Hour TSP Monitoring Results - Yeung Chun Pui Care & Attention Home

DATE	SAMPLE NUMBER	ELAPSED TIME INITIAL	ELAPSED TIME FINAL	ELAPSED TIME (min)	MIN CHART READING	MAX CHART READING	AVG CHART READING	AVG TEMP (oC)	STANDARD			INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-Hr TSP IN AIR (ug/m^3)
									AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
10-Jun-09	SM02	8273.12	8297.27	1449.00	30	32	31.0	28.3	1006.4	0.80	1164	2.8791	2.9206	0.0415	35
11-Jun-09	SM41	8297.27	8321.27	1440.00	29	32	30.5	26.6	1005.4	0.79	1139	2.8254	2.87	0.0446	38
12-Jun-09	SM52	8321.27	8344.74	1408.20	31	33	32.0	27.0	1005.2	0.83	1174	2.8256	2.8741	0.0485	40
13-Jun-09	SL11	8344.74	8368.96	1453.20	30	33	31.5	29.0	1005.4	0.82	1186	2.8355	2.886	0.0505	42
14-Jun-09	SL13	8368.96	8393.84	1492.80	30	32	31.0	27.6	1005.3	0.80	1200	2.8741	2.9199	0.0458	37
15-Jun-09	SL14	8393.84	8417.43	1415.40	29	31	30.0	26.6	1005.6	0.78	1100	2.8267	2.8753	0.0486	43
16-Jun-09	SM39	8417.43	8440.89	1407.60	29	32	30.5	27.4	1006.8	0.79	1113	2.8525	3.0975	0.2450	219
17-Jun-09	020040	8441.42	8466.17	1485.00	30	31	30.5	28.8	1006.6	0.79	1171	2.8482	2.9758	0.1276	108
18-Jun-09	020047	8466.17	8490.11	1436.40	28	32	30.0	29.0	1004.4	0.77	1110	2.8386	2.9744	0.1358	121
19-Jun-09	020045	8490.11	8514.84	1483.80	29	30	29.5	29.1	1002.9	0.76	1125	2.8176	2.9053	0.0877	77
20-Jun-09	020083	8514.84	8539.33	1469.40	28	31	29.5	29.9	1002.4	0.76	1112	2.818	2.9147	0.0967	86
21-Jun-09	020044	8539.37	8563.14	1426.20	28	31	29.5	30.1	1001.7	0.76	1078	2.8458	2.9167	0.0709	65
22-Jun-09	020085	8563.14	8586.37	1393.80	30	33	31.5	29.6	1003.7	0.81	1135	2.8368	2.9043	0.0675	59
23-Jun-09	020050	8586.37	8610.39	1441.20	30	32	31.0	29.8	1005.4	0.80	1154	2.8019	2.8813	0.0794	68
6-Aug-09	20315	8610.39	8634.74	1461.00	37	38	37.5	29	998.1	1.07	1567	2.8515	2.9641	0.1126	71
12-Aug-09	20369	8634.74	8659.12	1462.80	36	38	37.0	27.3	1005.7	1.07	1559	2.778	2.8681	0.0901	57
18-Aug-09	20415	8659.12	8683.55	1465.80	36	38	37.0	28.7	1010.9	1.07	1562	2.862	3.0138	0.1518	97
24-Aug-09	20419	8683.55	8707.99	1466.40	36	38	37.0	30.1	1008.6	1.06	1558	2.873	3.1791	0.3061	196
29-Aug-09	20516	8707.99	8732.43	1466.40	37	38	37.5	30.4	1008.6	1.08	1577	2.8063	3.0146	0.2083	131
4-Sep-09	20554	8732.43	8756.83	1464.00	36	38	37.0	30	1005.3	1.06	1553	2.8112	3.0402	0.2290	147
10-Sep-09	20564	8756.83	8781.23	1464.00	37	38	37.5	28.8	1006.6	1.08	1577	2.811	3.2411	0.4301	272
16-Sep-09	20620	8781.23	8805.65	1465.20	36	38	37.0	27.9	1010.2	1.07	1563	2.8611	2.9698	0.1087	69
22-Sep-09	20670	8805.65	8830.11	1467.60	36	38	37.0	28.2	1009.3	1.07	1564	2.8171	2.9815	0.1644	104
28-Sep-09	20516	8830.11	8854.41	1458.00	37	38	37.5	26.2	1004.8	1.08	1576	2.8063	3.0146	0.2083	132
6-Oct-09	20777	8854.41	8878.41	1440.00	36	38	37.0	28.4	1008.4	1.06	1524	2.8346	2.9601	0.1255	82
12-Oct-09	20841	8878.41	8902.2	1427.40	37	40	38.5	25.3	1014.1	1.11	1581	2.8736	3.0153	0.1417	90
17-Oct-09	20820	8902.20	8927.14	1496.40	40	42	41.0	26.5	1009.9	1.17	1754	2.8180	3.1276	0.3096	176
23-Oct-09	20903	8927.14	8950.84	1422.00	37	38	37.5	26.3	1011.3	1.08	1532	2.815	2.9779	0.1629	106
30-Oct-09	20918	8949.99	8974.24	1455.00	36	38	37.0	24.8	1016	1.07	1555	2.8422	2.9519	0.1097	70
5-Nov-09	20913	8974.24	8998.7	1467.60	36	38	37.0	23.5	1019.3	1.07	1574	2.8406	3.039	0.1984	126
11-Nov-09	20983	8998.70	9023.43	1483.80	36	38	37.0	26.2	1009.2	1.06	1577	2.8596	2.9441	0.0845	54
17-Nov-09	21053	9023.43	9067.47	2642.40	36	38	37.0	12.2	1021.4	1.09	2889	2.8630	2.9751	0.1121	**invalid**
23-Nov-09	21075	9067.47	9091.91	1466.40	36	38	37.0	18.8	1018.7	1.08	1584	2.8536	3.0173	0.1637	103
28-Nov-09	21095	9091.91	9116.04	1447.80	36	38	37.0	21.1	1018.8	1.08	1558	2.8200	2.9953	0.1753	113
4-Dec-09	21128	9116.04	9140.27	1453.80	36	38	37.0	17.6	1019.8	1.08	1574	2.898	3.0582	0.1602	102
10-Dec-09	21140	9140.27	9163.88	1416.60	36	38	37.0	20.3	1015.8	1.08	1525	2.8528	2.9415	0.0887	58
16-Dec-09	21193	9163.88	9187.49	1416.60	36	38	37.0	13.9	1021.3	1.09	1545	2.8968	3.0024	0.1056	68
22-Dec-09	21203	9187.49	9211.54	1443.00	36	38	37.0	16	1022.1	1.07	1548	2.9356	3.063	0.1274	82
28-Dec-09	21253	9211.54	9235.23	1421.40	36	38	37.0	12.2	1018.4	1.08	1531	2.8952	2.9901	0.0949	62
6-Jan-10	21286	9235.23	9259.23	1440.00	36	38	38.0	15.8	1018.6	1.10	1580	2.918	3.0092	0.0912	58
12-Jan-10	21321	9259.23	9282.89	1419.60	36	38	37.0	12.1	1023	1.08	1532	2.7302	2.8031	0.0729	47

Monitoring Location: Ho Tak Sum Primary School

Normal Day Time 07:00 - 19:00

Date	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	22 Jun 2009	23 Jun 2009
	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*
07:00	69.9	65.4	68.0	71.3	60.9	61.2	71.2	70.0	66.0	72.4	66.9	61.4
07:30	72.3	68.2	74.7	75.0	71.2	67.5	73.3	72.4	70.4	73.6	69.2	65.3
08:00	73.4	67.4	75.5	74.3	75.8	72.7	73.8	74.3	73.6	73.2	71.0	62.9
08:30	73.9	65.9	73.1	73.5	74.4	73.3	72.3	73.5	73.7	72.5	70.5	71.6
09:00	72.9	62.8	74.6	73.5	73.8	66.6	71.3	74.1	75.0	72.3	70.9	74.9
09:30	73.1	64.4	74.1	73.7	73.3	61.9	70.4	73.8	66.7	72.1	69.9	72.3
10:00	71.5	62.9	68.5	72.5	71.6	73.5	71.4	73.0	63.0	72.4	70.4	68.8
10:30	72.0	69.0	70.3	71.9	73.0	74.4	68.4	72.8	65.4	68.9	71.9	69.4
11:00	72.9	67.5	62.3	71.4	69.1	72.0	71.2	70.6	70.7	70.4	69.4	71.3
11:30	71.2	66.8	63.7	71.5	72.5	65.5	69.6	70.2	75.4	71.0	70.5	70.5
12:00	69.2	63.8	61.9	71.9	68.6	68.1	68.5	65.7	73.4	70.1	67.1	67.6
12:30	65.1	61.0	62.4	71.0	66.2	69.0	68.4	68.4	66.9	66.9	65.4	65.4
13:00	71.1	61.8	66.4	72.9	68.4	69.9	66.9	70.2	63.7	69.8	67.5	68.2
13:30	71.7	64.0	64.5	68.8	66.6	66.5	67.5	73.3	70.4	69.1	66.8	67.8
14:00	73.3	71.9	68.5	68.8	69.6	72.1	70.8	71.3	73.3	69.4	66.5	68.9
14:30	72.1	76.8	74.8	68.9	67.9	68.8	70.8	69.4	70.6	69.1	66.8	66.6
15:00	62.7	71.3	73.8	66.3	68.9	69.7	66.7	68.7	70.6	68.0	64.3	63.8
15:30	66.4	70.4	72.8	61.5	65.2	68.0	66.7	70.0	68.6	70.7	65.5	70.2
16:00	66.8	70.2	64.0	63.7	62.8	63.6	67.1	69.1	69.0	69.1	69.4	68.9
16:30	68.0	66.7	63.4	67.9	68.2	66.7	67.0	66.0	69.1	68.3	69.0	67.9
17:00	69.1	69.0	61.4	62.2	62.6	61.2	65.1	65.0	63.4	66.7	65.5	65.8
17:30	65.0	66.3	63.1	67.4	68.6	63.6	63.4	63.4	62.5	66.5	67.4	64.2
18:00	66.4	69.5	64.6	68.9	67.6	63.1	67.9	65.2	62.2	64.6	64.8	64.4
18:30	70.5	69.4	71.8	70.5	69.4	67.4	67.4	64.5	67.0	72.1	72.5	67.9

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

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected* Leq30
1-Aug-09	11:30	57.4	57.2	58.2	55.4	56.8	53.5	56.7	59.7
7-Aug-09	09:23	62.0	64.2	64.1	62.0	66.1	66.1	64.4	67.4
13-Aug-09	14:00	55.0	51.9	52.7	52.7	53.6	53.1	53.3	56.3
19-Aug-09	09:06	57.9	58.1	62.5	59.9	61.5	58.7	60.1	63.1
25-Aug-09	14:00	57.3	57.7	57.4	56.9	54.1	55.4	56.6	59.6
31-Aug-09	11:02	58.4	57.7	61.2	60.4	57.3	59.2	59.3	62.3
5-Sep-09	09:10	57.1	56.1	54.6	56.5	61.8	60.5	58.5	61.5
11-Sep-09	15:50	64.8	60.0	61.2	62.3	60.4	61.7	62.0	65.0
17-Sep-09	09:50	64.6	63.1	63.0	63.6	64.9	65.9	64.3	67.3
23-Sep-09	09:15	58.1	57.2	58.4	57.6	57.0	57.4	57.6	60.6
29-Sep-09	13:15	67.7	64.9	65.8	65.1	64.7	66.4	65.9	68.9
7-Oct-09	09:05	52.9	53.1	53.6	54.6	58.0	56.1	55.1	58.1
13-Oct-09	08:55	58.9	59.5	60.9	58.6	57.8	64.9	60.9	63.9
19-Oct-09	09:00	60.7	57.9	56.4	54.7	57.6	54.5	57.5	60.5
24-Oct-09	15:40	60.1	58.4	58.0	59.2	58.7	58.4	58.9	61.9
31-Oct-09	09:15	61.4	62.6	60.7	60.4	61.4	59.3	61.1	64.1
6-Nov-09	09:00	58.4	59.5	58.1	60.4	60.7	59.2	59.5	62.5
12-Nov-09	09:00	58.2	57.7	59.4	59.9	58.6	57.9	58.7	61.7
18-Nov-09	08:50	61.8	62.4	64.4	61.3	61.9	62.8	62.6	65.6
24-Nov-09	09:05	57.5	57.7	58.2	56.9	58.6	58.4	57.9	60.9
30-Nov-09	08:55	63.1	62.6	64.2	61.6	62.7	64.4	63.2	66.2
5-Dec-09	08:55	62.4	60.9	61.3	60.3	59.4	60.1	60.8	63.8
11-Dec-09	09:00	60.7	60.1	59.4	62.3	62.1	63.4	61.6	64.6
17-Dec-09	08:55	61.4	60.9	61.2	62.7	61.1	60.5	61.4	64.4
23-Dec-09	08:30	55.4	56.3	54.9	57.1	57.5	56.5	56.4	59.4
29-Dec-09	10:00	62.4	61.9	60.8	61.4	62.1	62.2	61.8	64.8
7-Jan-10	08:25	60.3	58.7	59.4	60.7	60.4	61.1	60.2	63.2
13-Jan-10	08:25	57.6	58.1	59.7	59.3	57.9	57.7	58.5	61.5

Monitoring Location: Ho Tak Sum Primary School

Baseline Data for Restricted Hour 1900-2300

Date	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	14 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	21 Jun 2009	22 Jun 2009	23 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)
19:00	72.8	61.4	72.6	72.1	73.1	73.6	73.4	72.1	73.4	71.0	74.2	70.6	73.7	68.0
19:15	66.6	61.5	67.7	65.7	72.1	69.5	69.3	72.5	72.2	71.2	73.4	69.9	70.2	68.3
19:30	60.5	62.3	59.8	60.5	61.6	60.6	60.0	62.5	66.1	65.3	65.9	63.3	65.0	64.6
19:45	60.8	61.6	59.4	58.5	60.4	61.1	61.4	59.7	61.1	59.7	63.5	63.2	65.4	62.6
20:00	61.0	59.4	58.6	59.6	63.2	60.6	58.9	60.8	59.8	60.6	66.4	62.0	62.4	59.4
20:15	59.7	60.8	59.9	60.3	63.1	61.8	60.3	60.5	62.2	60.8	66.5	63.5	62.3	62.5
20:30	60.3	59.7	61.9	58.3	62.5	60.1	61.4	60.2	63.6	62.1	62.7	62.4	61.3	60.5
20:45	60.3	60.1	62.1	59.9	63.2	59.1	61.4	60.4	61.5	60.4	60.5	61.9	62.1	61.2
21:00	60.5	59.1	61.4	59.0	64.3	60.1	59.5	60.3	61.7	60.8	61.4	61.6	60.2	62.5
21:15	60.9	60.4	60.0	59.1	63.9	59.0	61.0	60.1	62.5	60.0	60.9	63.6	59.7	60.3
21:30	61.1	61.9	59.2	59.7	64.4	59.5	59.7	60.7	60.4	60.7	61.7	62.3	63.7	59.2
21:45	60.4	62.6	61.2	59.8	68.2	60.0	59.3	59.8	60.4	60.1	61.8	60.5	62.7	59.2
22:00	59.7	61.0	62.0	60.1	68.5	58.5	58.8	58.3	61.2	62.7	60.0	60.5	60.6	59.0
22:15	57.9	60.7	58.8	58.9	67.0	62.7	60.7	58.6	60.7	59.9	61.0	63.2	64.1	58.9
22:30	58.4	58.4	58.3	58.8	68.3	58.0	57.9	58.5	59.5	59.1	59.7	60.7	61.3	59.5
22:45	58.2	57.9	58.3	58.3	69.0	58.8	58.6	58.5	61.3	59.3	60.0	59.7	58.5	59.0

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

Baseline Data for Restricted Hour 2300 - 0700 Next Day

Date	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	14 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	21 Jun 2009	22 Jun 2009	23 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)
00:00	58.4	57.6	59.2	57.3	60.8	59.9	57.0	59.6	57.5	68.0	58.3	59.3	60.6	66.5
00:15	57.3	56.9	57.1	56.8	58.2	62.0	58.6	56.7	58.5	68.4	60.1	58.1	60.5	57.2
00:30	59.1	56.9	57.3	56.6	61.2	56.9	61.4	56.8	58.3	64.7	62.6	58.4	58.3	63.2
00:45	56.5	57.7	57.1	56.4	61.5	56.6	57.6	59.1	56.5	64.0	58.0	57.2	57.1	62.3
01:00	60.1	59.4	57.6	56.7	59.5	61.2	57.4	58.7	56.4	60.5	56.8	57.5	57.5	62.6
01:15	57.2	57.2	56.8	60.2	59.8	59.7	56.7	56.6	56.2	62.5	57.1	57.3	58.2	60.4
01:30	57.8	56.2	56.2	58.2	72.8	56.3	55.9	56.4	56.8	66.5	58.8	57.4	58.4	61.9
01:45	58.7	56.3	56.4	56.5	84.9	56.4	57.3	55.9	56.1	63.9	57.7	56.9	57.9	63.7
02:00	57.9	57.1	56.0	58.6	76.5	55.8	56.4	57.5	56.1	63.0	59.9	56.8	58.6	61.8
02:15	62.1	56.2	56.1	58.8	61.6	59.0	60.7	56.1	56.1	63.9	60.5	57.4	57.1	59.5
02:30	59.3	56.4	59.4	56.9	60.3	59.3	55.8	56.6	55.7	60.1	58.6	57.7	58.0	63.7
02:45	55.8	56.2	55.5	56.3	59.7	55.8	56.3	56.1	56.5	57.0	56.8	56.2	56.8	63.3
03:00	57.8	55.7	55.2	55.8	61.2	56.9	60.4	56.1	56.7	58.7	56.4	56.2	57.0	62.4
03:15	55.8	55.7	55.4	56.6	62.9	56.3	55.8	55.9	56.2	61.0	56.5	56.2	56.8	56.4
03:30	57.3	56.1	55.7	56.7	59.4	56.1	56.5	56.4	56.6	56.0	56.1	57.5	56.8	56.8
03:45	56.4	56.2	55.5	55.7	59.2	55.9	56.4	55.6	56.0	55.8	56.7	56.7	60.2	56.1
04:00	55.8	55.7	55.8	56.4	60.3	56.2	57.7	55.9	57.1	55.9	56.4	56.3	66.0	57.0
04:15	55.8	56.4	56.2	56.3	58.8	56.8	56.3	56.3	57.0	55.7	56.4	56.8	57.5	57.4
04:30	55.9	57.4	56.9	56.6	59.1	56.1	56.1	56.1	57.9	57.1	57.2	58.2	59.4	57.5
04:45	56.8	56.5	56.1	56.8	59.9	55.9	57.2	56.6	57.3	57.1	58.7	58.9	57.9	57.2
05:00	57.0	57.0	56.3	56.1	60.7	56.6	57.6	58.3	56.7	57.9	59.0	57.8	58.0	58.3
05:15	57.4	60.7	59.3	60.8	62.3	61.0	57.6	58.4	62.5	68.0	64.3	66.1	63.8	64.4
05:30	60.3	60.6	60.6	63.9	66.1	61.6	62.5	57.5	59.0	63.6	61.0	63.0	62.8	65.1
05:45	64.3	59.7	57.1	63.6	59.0	60.5	57.9	60.6	57.2	59.8	57.9	57.8	59.3	67.6
06:00	60.2	58.3	57.6	66.6	58.6	59.0	58.4	60.6	58.4	59.5	61.0	57.5	59.0	63.1
06:15	60.1	58.6	57.9	62.6	58.8	58.3	58.0	62.4	58.4	60.8	66.0	60.2	61.5	63.2
06:30	66.4	62.0	61.8	60.5	59.4	60.1	58.3	62.6	61.6	59.1	70.8	60.8	61.8	59.9
06:45	69.3	61.5	65.0	65.4	63.1	60.3	58.9	66.6	64.5	59.6	71.0	59.2	63.6	60.2
23:00	60.2	57.3	60.4	57.5	68.6	57.9	60.1	58.5	59.5	58.3	59.7	60.7	61.2	61.1
23:15	60.1	58.3	58.5	60.3	65.4	61.1	57.8	58.2	64.2	63.0	59.6	59.9	66.4	57.6
23:30	60.4	59.0	57.8	61.4	61.1	57.8	58.1	58.0	62.8	66.4	59.1	60.1	68.5	58.2
23:45	58.2	59.3	59.4	61.6	65.4	61.2	59.5	57.8	64.4	63.5	58.6	60.7	69.9	61.2

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

Restricted Hour 0700-1900 Holiday

Date	14 Jun 2009	21 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)
07:00	61.6	58.6
07:15	60.8	59.3
07:30	58.2	58.1
07:45	61.2	58.4
08:00	61.5	57.2
08:15	59.5	57.5
08:30	59.8	57.3
08:45	72.8	57.4
09:00	84.9	56.9
09:15	76.5	56.8
09:30	61.6	57.4
09:45	60.3	57.7
10:00	59.7	56.2
10:15	61.2	56.2
10:30	62.9	56.2
10:45	59.4	57.5
11:00	59.2	56.7
11:15	60.3	56.3
11:30	58.8	56.8
11:45	59.1	58.2
12:00	59.9	58.9
12:15	60.7	57.8
12:30	62.3	66.1
12:45	66.1	63.0
13:00	59.0	57.8
13:15	58.6	57.5
13:30	58.8	60.2
13:45	59.4	60.8
14:00	63.1	59.2
14:15	64.9	65.3
14:30	69.1	67.9
14:45	70.9	69.4
15:00	71.3	69.7
15:15	74.0	73.6
15:30	76.4	66.1
15:45	76.1	66.3
16:00	75.8	65.5
16:15	76.0	69.0
16:30	75.4	70.0
16:45	74.2	70.6
17:00	76.2	72.5
17:15	77.6	68.8
17:30	77.5	69.0
17:45	76.3	64.9
18:00	77.0	69.0
18:15	75.7	70.8
18:30	74.8	69.4
18:45	75.9	70.1

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

Monitoring Location: Yeung Chun Pui Care & Attention Home

Normal Day Time 07:00 - 19:00

Time	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	22 Jun 2009	23 Jun 2009
	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*	Leq(30mins)*
07:00	61.3	62.5	65.4	63.2	63.2	62.8	63.8	64.2	64.2	63.2	62.4	63.5
07:30	64.0	64.3	66.2	65.3	64.9	64.5	66.2	63.8	64.4	65.2	62.9	68.6
08:00	64.9	77.2	66.5	63.1	63.7	67.8	64.9	63.4	67.7	62.9	63.9	63.8
08:30	65.7	77.1	65.8	64.5	66.0	65.6	64.2	65.8	63.9	64.4	69.8	67.7
09:00	66.6	69.7	67.2	65.3	67.4	69.6	67.4	67.1	67.4	66.0	64.9	67.9
09:30	63.5	70.4	66.6	64.6	64.6	71.6	64.6	65.2	66.0	66.8	66.2	68.1
10:00	62.0	69.4	64.3	62.6	64.5	66.6	70.5	64.7	65.4	64.1	66.8	62.9
10:30	62.1	67.0	77.4	64.2	64.6	67.5	67.4	66.0	64.5	64.8	67.4	64.6
11:00	61.9	66.3	70.3	63.0	65.2	67.3	66.1	64.2	64.7	64.5	66.9	63.7
11:30	61.4	65.3	69.2	62.2	64.7	64.6	64.8	63.4	62.1	62.5	65.2	62.6
12:00	63.0	65.9	67.8	61.3	61.6	63.2	60.8	63.1	61.0	67.0	63.0	62.5
12:30	59.9	66.3	69.0	60.7	62.1	62.4	63.1	61.5	61.8	61.9	62.0	62.0
13:00	63.7	68.2	66.8	63.2	65.7	66.6	64.8	63.2	65.1	62.3	63.9	64.8
13:30	64.0	68.9	66.4	63.8	66.0	64.0	67.5	62.7	65.9	65.7	63.4	64.0
14:00	62.9	66.6	67.2	63.1	68.4	62.9	67.7	63.7	64.7	65.2	66.3	63.6
14:30	62.3	68.0	66.0	65.1	66.0	63.1	65.0	63.7	64.2	64.5	66.9	65.8
15:00	63.2	66.7	69.1	63.6	67.0	66.4	67.3	62.8	64.2	64.5	62.8	63.7
15:30	62.7	67.3	65.2	63.7	64.8	65.1	63.6	63.9	64.1	64.5	63.8	63.2
16:00	63.0	67.5	67.3	63.3	63.9	64.1	63.3	64.6	64.3	65.3	64.1	62.6
16:30	63.7	67.1	67.8	64.1	63.4	64.8	65.5	64.5	64.7	66.5	62.9	64.1
17:00	61.6	65.9	64.3	63.2	64.4	62.8	63.5	64.3	62.7	63.7	62.9	65.8
17:30	62.8	65.1	62.9	64.3	62.3	62.5	62.3	62.3	63.4	61.7	63.2	65.2
18:00	61.3	63.4	61.9	63.6	62.2	62.0	60.9	61.6	61.2	61.3	61.4	65.2
18:30	59.1	71.7	60.9	62.7	60.1	61.3	63.5	60.2	61.2	59.9	61.0	61.9

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

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30min	Corrected* Leq30
1-Aug-09	13:15	52.9	52.4	55.1	56.4	52.6	53.8	54.1	57.1
7-Aug-09	10:03	66.3	68.2	70.0	66.3	68.6	68.7	68.2	71.2
13-Aug-09	13:00	59.4	62.3	62.2	60.5	60.7	61.2	61.2	64.2
19-Aug-09	09:51	59.4	58.8	57.0	57.2	57.6	57.1	58.0	61.0
25-Aug-09	13:00	60.1	58.2	58.0	60.6	63.1	62.3	60.8	63.8
31-Aug-09	09:52	61.3	60.8	61.7	59.4	61.0	62.6	61.2	64.2
5-Sep-09	10:00	63.8	64.1	63.2	63.6	59.4	60.3	62.7	65.7
11-Sep-09	15:15	62.7	66.5	64.8	62.9	66.9	65.3	65.1	68.1
17-Sep-09	09:10	62.4	58.0	57.3	60.9	61.1	58.4	60.1	63.1
23-Sep-09	09:50	67.3	64.7	62.8	63.3	65.1	64.5	64.9	67.9
29-Sep-09	14:00	56.2	56.6	59.4	64.2	58.9	57.2	59.8	62.8
7-Oct-09	09:40	67.5	63.4	66.5	71.2	65.3	60.4	67.0	70.0
13-Oct-09	09:35	63.7	62.5	62.2	63.2	61.7	64.2	63.0	66.0
19-Oct-09	09:40	56.2	58.1	64.2	56.6	60.5	59.4	60.1	63.1
24-Oct-09	15:00	68.0	67.3	65.4	67.1	66.8	66.9	67.0	70.0
31-Oct-09	09:40	62.4	64.1	66.9	62.7	61.9	62.4	63.8	66.8
6-Nov-09	09:45	60.4	61.9	62.4	62.2	60.7	62.3	61.7	64.7
12-Nov-09	09:45	64.2	64.4	66.3	63.7	63.2	64.4	64.5	67.5
18-Nov-09	09:40	63.7	63.1	64.8	62.7	64.2	64.7	63.9	66.9
24-Nov-09	10:15	62.4	63.7	63.3	64.2	66.9	64.1	64.3	67.3
30-Nov-09	09:45	65.6	63.3	63.9	62.7	64.9	62.8	64.0	67.0
5-Dec-09	09:45	64.5	62.7	63.3	65.4	64.1	63.2	64.0	67.0
11-Dec-09	09:45	67.2	64.3	65.1	63.9	64.7	65.6	65.3	68.3
17-Dec-09	09:35	58.7	60.4	60.7	60.1	61.4	61.1	60.5	63.5
23-Dec-09	09:20	60.3	60.9	61.8	60.9	58.9	59.3	60.5	63.5
29-Dec-09	10:45	61.5	63.1	62.4	61.9	62.9	64.1	62.7	65.7
7-Jan-10	09:10	62.1	61.5	63.7	61.9	62.2	63.4	62.5	65.5
13-Jan-10	09:15	60.0	59.8	60.3	61.6	62.8	60.9	61.0	64.0

Monitoring Location: Yeung Chun Pui Care & Attention Home

Baseline Data for Restricted Hour 1900-2300

Date	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	14 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	21 Jun 2009	22 Jun 2009	23 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)
19:00	63.3	58.6	61.6	57.0	59.3	59.7	59.8	60.7	59.8	59.5	57.8	59.6	65.1	62.1
19:15	62.7	58.2	62.8	56.4	59.0	59.2	61.1	60.0	59.5	58.1	57.3	59.0	59.4	56.4
19:30	61.7	57.7	67.2	57.3	57.7	57.8	59.8	58.5	58.9	57.7	56.7	59.4	58.6	55.6
19:45	61.3	58.1	65.8	56.9	58.5	57.2	60.9	58.2	60.2	58.4	57.5	58.7	58.3	55.3
20:00	61.6	58.8	57.7	56.7	58.4	57.8	60.9	57.4	57.5	57.6	56.6	58.5	57.9	54.9
20:15	61.5	57.8	55.6	55.6	56.9	57.6	58.8	57.9	58.3	58.2	56.6	58.9	58.7	55.7
20:30	61.0	56.8	57.0	56.3	56.9	56.5	60.6	57.7	58.1	57.0	57.4	58.2	59.9	56.9
20:45	60.8	57.4	57.3	60.8	57.7	64.4	60.5	57.8	57.7	57.1	57.1	58.8	58.5	55.5
21:00	60.7	57.2	62.0	56.2	57.4	59.7	60.9	57.7	58.4	56.8	56.8	56.7	58.0	55.0
21:15	62.6	57.2	58.7	61.1	57.6	56.5	59.3	57.4	57.3	58.0	56.3	57.9	58.6	55.6
21:30	62.0	57.1	56.1	57.7	57.4	59.4	60.6	58.2	56.9	56.8	56.6	57.6	57.8	54.8
21:45	59.0	57.2	55.6	55.7	56.3	56.3	57.0	65.2	57.1	56.6	55.3	56.9	56.7	53.7
22:00	58.8	59.1	60.7	56.0	56.3	55.6	56.3	56.6	57.8	55.2	54.9	56.9	56.6	53.6
22:15	59.4	57.0	58.6	56.3	57.0	56.5	56.9	55.7	56.8	55.8	55.9	56.3	57.3	54.3
22:30	60.0	57.4	56.7	56.2	54.1	55.6	56.0	54.9	56.6	55.7	55.8	56.1	57.1	54.1
22:45	59.1	55.4	56.2	55.2	55.6	55.4	57.1	55.9	55.8	54.8	55.2	55.8	56.8	53.8

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

Baseline Data for Restricted Hour 2300 - 0700 Next Day

Date	10 Jun 2009	11 Jun 2009	12 Jun 2009	13 Jun 2009	14 Jun 2009	15 Jun 2009	16 Jun 2009	17 Jun 2009	18 Jun 2009	19 Jun 2009	20 Jun 2009	21 Jun 2009	22 Jun 2009	23 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)	*Leq(15mins)
00:00	52.7	53.2	56.8	54.7	54.4	55.2	54.6	54.1	55.1	54.7	54.5	53.4	54.1	55.0
00:15	51.6	52.4	58.1	52.6	54.2	56.0	54.6	53.7	53.7	54.3	54.7	53.5	53.8	54.6
00:30	52.4	53.5	55.9	52.8	54.2	61.3	53.0	52.4	54.9	52.6	54.5	53.8	54.0	57.1
00:45	53.0	52.9	56.6	53.6	54.3	54.5	52.6	52.1	53.1	52.6	53.8	53.5	52.9	54.6
01:00	51.1	53.0	55.2	53.5	59.2	54.8	54.0	52.2	53.9	53.2	53.3	53.8	52.8	54.2
01:15	51.4	51.6	55.1	52.9	56.2	53.9	52.9	50.5	53.1	51.9	52.9	52.5	53.0	54.3
01:30	51.3	52.1	54.5	51.9	73.3	54.0	53.1	51.9	52.7	51.8	54.6	53.5	52.8	53.8
01:45	51.7	50.5	54.0	52.7	86.7	54.6	52.6	50.1	52.7	52.7	52.8	53.2	52.8	54.8
02:00	51.2	50.6	54.0	53.0	87.1	54.4	52.0	50.3	53.4	53.0	52.6	54.2	56.2	54.0
02:15	49.7	50.2	53.3	52.6	60.2	54.5	51.8	50.7	52.7	52.1	53.3	52.6	52.7	53.6
02:30	50.4	50.1	55.2	54.1	59.3	55.0	52.4	51.4	53.4	51.9	53.0	52.7	52.9	54.3
02:45	49.3	49.5	55.2	58.8	64.0	56.5	52.2	51.2	53.2	52.1	52.5	52.6	52.6	54.0
03:00	49.7	49.7	54.8	55.8	68.2	55.0	52.0	50.8	52.7	51.4	52.4	52.2	52.8	53.7
03:15	50.0	50.1	55.1	53.1	63.6	54.3	52.6	50.8	52.9	52.1	52.5	51.7	52.5	58.0
03:30	50.0	49.6	55.7	53.3	63.5	54.5	52.6	50.3	53.4	51.9	52.8	52.2	53.1	54.0
03:45	50.4	49.7	55.8	53.2	58.9	54.5	54.9	50.8	54.1	52.2	52.8	52.1	53.0	54.5
04:00	51.5	49.8	54.6	53.3	58.9	54.2	56.1	50.6	55.0	52.9	52.9	52.1	52.4	54.3
04:15	57.0	50.4	52.9	53.4	58.6	54.3	54.6	50.5	56.7	52.2	53.8	56.8	52.8	53.8
04:30	58.8	50.6	53.3	53.7	58.7	56.2	53.5	52.4	58.4	52.7	54.8	58.9	53.1	55.5
04:45	58.8	51.0	52.3	52.6	58.9	56.3	52.5	50.5	61.0	52.3	57.5	54.8	52.8	59.9
05:00	57.6	52.3	54.5	53.7	58.2	55.6	53.6	53.8	60.7	53.8	61.3	53.6	53.2	58.9
05:15	57.1	56.5	56.0	59.1	58.3	58.1	56.1	57.6	57.3	58.2	57.5	57.3	55.6	55.8
05:30	56.1	59.1	53.3	56.7	58.5	58.1	57.5	56.2	62.1	58.9	56.5	58.2	57.1	56.4
05:45	55.3	56.9	54.7	57.2	60.3	56.8	55.8	56.3	55.8	58.0	59.3	55.0	58.6	56.4
06:00	58.2	58.7	56.7	57.5	60.5	57.4	58.2	58.3	56.2	59.3	59.2	54.7	61.4	57.1
06:15	57.8	58.1	59.4	60.4	60.6	60.0	57.9	57.6	59.4	61.7	58.0	55.7	57.6	67.1
06:30	59.8	58.3	61.3	63.0	62.4	59.8	58.6	63.4	62.0	59.8	59.8	56.0	60.6	60.2
06:45	61.4	59.6	59.8	63.4	65.0	60.8	57.9	59.4	60.3	58.9	60.2	58.5	60.3	59.3
23:00	59.4	58.1	55.1	56.0	55.7	54.9	55.6	56.6	55.5	56.1	55.7	55.1	56.2	56.3
23:15	54.9	56.9	56.5	55.1	55.3	55.4	54.3	55.7	55.3	56.9	57.0	54.4	55.7	56.0
23:30	54.6	57.7	54.6	54.5	54.9	54.6	54.4	54.9	54.0	55.2	55.1	54.8	55.4	55.4
23:45	53.7	57.4	54.7	55.5	55.7	54.1	54.2	55.0	54.7	54.7	54.9	54.9	55.5	55.6

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

Restricted Hour 0700-1900 Holiday

Date	14 Jun 2009	21 Jun 2009
Time	*Leq(15mins)	*Leq(15mins)
07:00	61.9	58.9
07:15	61.6	59.5
07:30	62.2	60.3
07:45	64.5	58.9
08:00	62.3	61.3
08:15	61.7	59.9
08:30	60.9	62.1
08:45	62.0	61.4
09:00	66.9	60.8
09:15	65.4	64.8
09:30	63.5	61.1
09:45	73.3	61.4
10:00	66.9	60.3
10:15	64.8	60.6
10:30	67.1	61.4
10:45	64.4	61.4
11:00	61.3	60.1
11:15	60.6	60.2
11:30	64.3	60.3
11:45	58.7	59.4
12:00	59.0	59.6
12:15	57.4	60.1
12:30	58.9	60.5
12:45	58.8	58.4
13:00	59.9	58.8
13:15	63.3	61.7
13:30	64.0	60.7
13:45	60.3	60.4
14:00	63.2	61.1
14:15	59.3	61.8
14:30	59.8	61.1
14:45	61.1	63.5
15:00	61.6	61.9
15:15	60.0	61.6
15:30	60.3	59.8
15:45	61.5	59.0
16:00	62.4	59.7
16:15	67.2	58.7
16:30	67.5	59.1
16:45	62.2	58.3
17:00	58.2	60.4
17:15	59.7	59.0
17:30	61.8	58.8
17:45	73.4	59.0
18:00	60.5	60.7
18:15	60.1	58.1
18:30	57.5	58.4
18:45	59.3	57.9

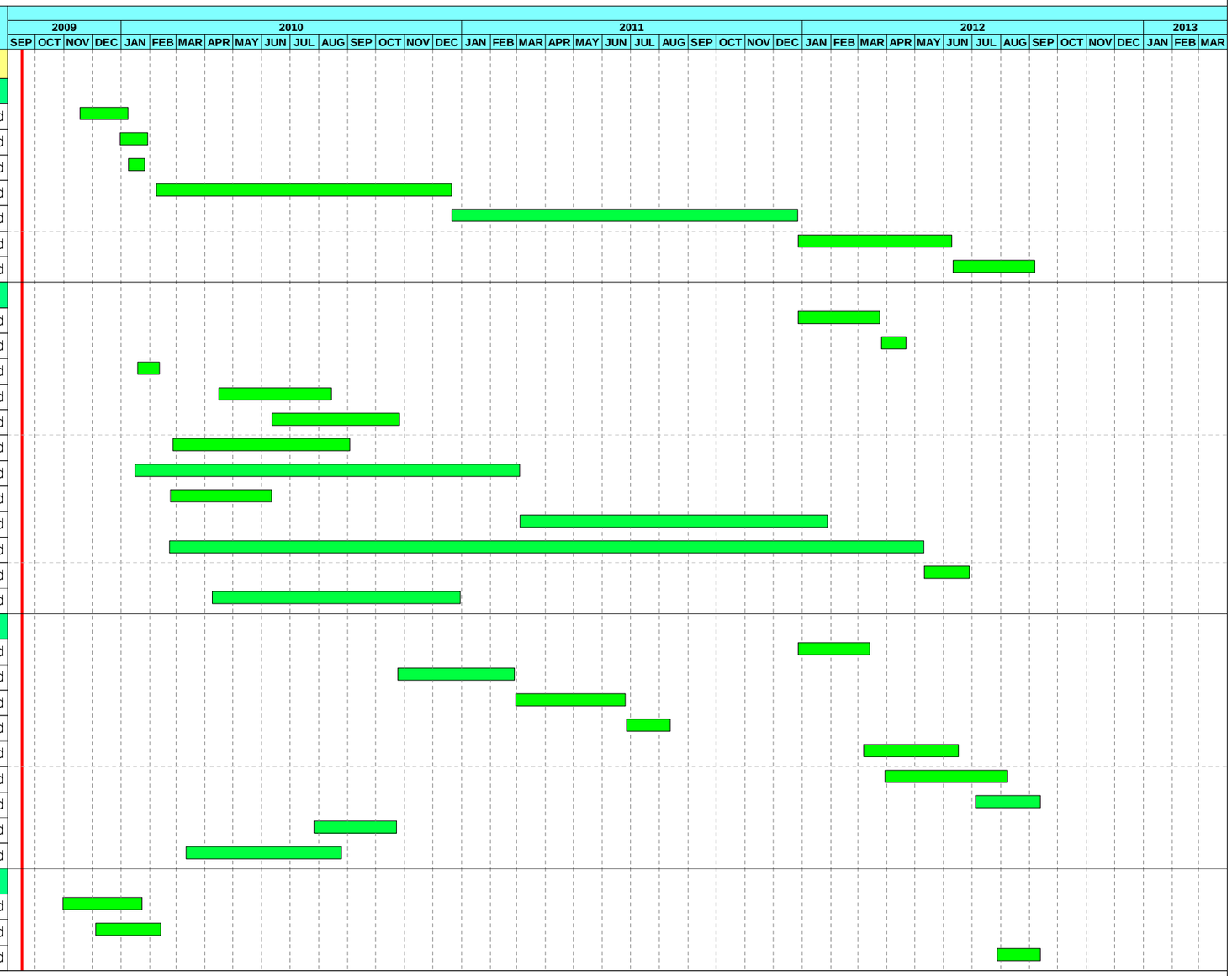
Remarks **+ 3dB(A) of A façade correction has been added according to acoustical principles and EPD guidelines*

Annex H

Master Construction Program

Contract No. DC/2009/08
Construction of Yuen Long South Branch Sewers and Expansion of HTS Pumping Station

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
Ha Tsuen Area					
Pumping Station					
H/200020	Site investigation and report	42	18NOV09	08JAN10	67d
H/200030	Install acoustic screen	25	31DEC09	29JAN10	154d
H/200040	Installation of monitoring point	15	09JAN10	26JAN10	157d
H/200050	Prebored H-piles	210	08FEB10	21DEC10	147d
H/200070	Substructure	252 *	22DEC10	27DEC11	147d
H/201800	Superstructure	84	28DEC11	09JUN12	158d
H/202100	Finishes	75	11JUN12	06SEP12	158d
Rising Main					
H/300010	Gang B: RM from station to extg valve chamber	70	28DEC11	24MAR12	192d
H/300020	Testing of RM bet station and extg valve chamber	20	26MAR12	21APR12	192d
H/300200	Trial pit to locate existing sleeve at nullah	21	19JAN10	11FEB10	116d
H/300210	Rising Main under existing nullah	100	16APR10	14AUG10	133d
H/300400	Rising Main bet ch274 to ch298 & washout chamber	112	12JUN10	26OCT10	4d
H/300500	Rising Main between ch0 to ch89	155	26FEB10	03SEP10	116d
H/300600	Pipe jacking between ch385 to ch815	330 *	16JAN10	04MAR11	96d
H/300665	Pipe jacking between ch298 to ch385	88	23FEB10	11JUN10	4d
H/300800	Gang A : RM between ch815 to ch1002	264 *	05MAR11	28JAN12	96d
H/300900	Gang A : RM between ch1002 to ch1585	651 *	22FEB10	10MAY12	13d
H/301430	Testing of RM bet ch1787 to extg valve chamber	40	11MAY12	28JUN12	13d
H/302000	Pipe jacking between ch 1585 to ch1787.2	219 *	09APR10	30DEC10	359d
Road and Drain					
H/400020	Concrete pipe between extension to FM17	60	28DEC11	13MAR12	153d
H/400030	Sewage between FM17 to FM15 and manholes	100 *	25OCT10	26FEB11	169d
H/400050	Concrete pipe between M1 to FM16	50	28FEB11	25JUN11	169d
H/400090	Manhole M1 and sewage connection	40	27JUN11	12AUG11	169d
H/400100	Storm water drain	36	07MAR12	16JUN12	153d
H/400110	Power supply to pumping station	60	30MAR12	08AUG12	153d
H/400115	Roadworks	60 *	05JUL12	12SEP12	153d
H/400135	Pipe jacking between FM16 to existing FM7	74 *	27JUL10	23OCT10	169d
H/410010	Pipe jacking between FM16 to FM15	89 *	12MAR10	25AUG10	169d
Landscaping					
H/600110	Tree transplant at HTSPS Extension	70	31OCT09	23JAN10	7d
H/600120	Tree transplant at Ping Ha Road	70	05DEC09	12FEB10	158d
H/600130	Landscaping finishes at HTSPS	40	28JUL12	12SEP12	153d



Start date	17SEP09
Finish date	02JUL15
Run date	05FEB10
Project name	WP11
Page number	1A
c Primavera Systems, Inc.	

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

Initial Works Programme - Rev 02 (Ha Tsuen Area)

中國建築 CHINA STATE CONSTRUCTION

Annex I

Meteorological

The meteorological information extracted from the HK Observatory (Lau Fau Shan Station)

Date		Weather	Total Rainfall (mm)	Lau Fau Shan Station			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
22-Dec-09	Tue	Sunny periods. Moderate easterly winds.	0	16	10.8	69	E
23-Dec-09	Wed	Cloudy. Sunny periods tomorrow. Moderate easterly winds.	0	19.2	15	68	E/NE
24-Dec-09	Thu	Mainly fine. Moderate easterly winds.	0	18.9	11.6	82.5	W/SW
25-Dec-09	Fri	Holiday					
26-Dec-09	Sat	Holiday					
27-Dec-09	Sun	Mainly cloudy. Cold in the morning. Moderate north to northeasterly winds.	3.1	15.5	19.5	78.5	E/NE
28-Dec-09	Mon	Cloudy with a few rain patches. It will be cool. Moderate to fresh easterly winds.	5.7	10.2	15	73.5	N/NE
29-Dec-09	Tue	Cloudy with a few rain patches and mist. It will be cool.	3.5	14.8	9.2	88.5	E/NE
30-Dec-09	Wed	Cloudy with a few rain patches and mist. Fresh easterly winds, strong over offshore waters.	2.5	16.3	9.5	90.5	E/NE
31-Dec-09	Thu	Sunny periods. Visibility relatively low. Light to moderate easterly winds.	1.0	14.6	12.2	90	E/NE
1-Jan-10	Fri	Holiday					
2-Jan-10	Sat	Sunny periods in the afternoon. Mainly cloudy tonight. Light to moderate easterly winds.	5.2	16.8	10.7	87.5	E/NE
3-Jan-10	Sun	Overcast with rain patches and low visibility. Moderate to fresh northerly winds.	3.5	16.7	7.2	81.2	E/NE
4-Jan-10	Mon	Moderate to fresh northerly winds.	0	18.6	9.5	72.5	E
5-Jan-10	Tue	Overcast with rain patches. Moderate to fresh northerly winds.	0.8	17.3	16.5	75	E/SE
6-Jan-10	Wed	Mainly cloudy at first, becoming fine. Moderate northeasterly winds.	1.2	14.1	15.5	89	E/NE
7-Jan-10	Thu	Overcast and cold with light rain patches. Moderate to fresh northerly winds.	0.5	11.1	10.2	83	E/NE
8-Jan-10	Fri	Mainly cloudy. Moderate north to northeasterly winds, occasionally fresh.	0.9	11.5	12.5	81	N/NE
9-Jan-10	Sat	Moderate east to northeasterly winds, fresh over offshore waters at first.	0	15.4	11	71.2	NE
10-Jan-10	Sun	Overcast with a few rain patches.	Trace	18.9	12.2	71.5	E
11-Jan-10	Mon	Fresh northerly wind, occasionally strong over offshore waters and on high ground.	12.5	14.4	15.5	89.5	N/NE
12-Jan-10	Tue	Fine and dry. It is cold. Fresh northerly winds,	0	11.2	21	62.5	N/NE
13-Jan-10	Wed	Fine and very dry. Cold in the morning. Moderate north to northeasterly winds.	0	11.8	14.7	45	N/NE
14-Jan-10	Thu	Dry with sunny periods. Moderate easterly winds, occasionally fresh over offshore waters.	Trace	15.2	14	52	E/NE
15-Jan-10	Fri	Sunny periods. Moderate east to northeasterly winds, fresh over offshore waters at first.	0	17.5	15	62.5	E
16-Jan-10	Sat	Mainly fine. Moderate easterly winds, occasionally fresh over offshore waters.	0	18.1	9	55.2	E/SE
17-Jan-10	Sun	Mainly fine apart from some haze. Moderate easterly winds.	0	16	11.5	68.2	E/NE
18-Jan-10	Mon	Sunny periods. Moderate easterly winds, occasionally fresh over offshore waters at first.	0	15.9	12.5	77.2	E

The meteorological information extracted from the HK Observatory (Lau Fau Shan Station)

Date		Weather	Total Rainfall (mm)	Lau Fau Shan Station			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
8-Feb-10	Mon	Moderate to fresh easterly winds	7.1	19.1	11.5	91	E/NE
9-Feb-10	Tue	Foggy with a few light rain patches at first.	0	23.8	18.5	80.5	S/SE
10-Feb-10	Wed	Moderate to fresh easterly winds.	Trace	25.2	16.7	7	S/SE
11-Feb-10	Thu	Mainly cloudy with light rain.	Trace	25.6	19	76	S/SW
12-Feb-10	Fri	Cloudy to overcast with a few rain patches.	Trace	17	24	74	NE
13-Feb-10	Sat	Holiday	0	11	14.1	84	60
14-Feb-10	Sun	Holiday	2	13.9	11.1	95	80
15-Feb-10	Mon	Holiday	1.5	9.9	11.9	93	60
16-Feb-10	Tue	Holiday	1.5	7.9	13.7	85	50
17-Feb-10	Wed	Moderate to fresh northerly winds.	1	7.9	18.2	83.5	N/NE
18-Feb-10	Thu	It will be cold and cloudy with a few light rain patches.	0.8	8.1	17.7	69.5	NE
19-Feb-10	Fri	Mainly cloudy with a few rain patches at first.	3.7	7.7	13.5	88	N/NE
20-Feb-10	Sat	Cloudy with mist. A few showers at first.	Trace	11.9	8.8	72.5	N/NE
21-Feb-10	Sun	Moderate east to northeasterly winds.	Trace	16.2	9	73.5	E/NE
22-Feb-10	Mon	Cloudy. Sunny periods during the day.	0.1	18.6	8.2	82.2	N/NW
23-Feb-10	Tue	Cloudy with mist patches. Sunny intervals during the day.	0	20.3	11.5	79.5	E/SE
24-Feb-10	Wed	Mainly cloudy with a few showers.	Trace	23.2	22.2	78.5	S/SE
25-Feb-10	Thu	Misty tomorrow morning. Sunny periods during the day.	0.4	24.8	13.5	82	S/SE
26-Feb-10	Fri	Sunny intervals with one or two showers.	0.3	25.2	13.5	84	S/SE
27-Feb-10	Sat	Mainly cloudy with fog patches.	Trace	25.7	13.2	81.2	S/SE
28-Feb-10	Sun	Light to moderate southerly winds.	Trace	26	19.5	75.5	S/SE
1-Mar-10	Mon	Foggy. Moderate east to southeasterly winds.	0	25.9	24	76.2	S/SE
2-Mar-10	Tue	Sunny periods and coastal fog. Moderate southerly winds.	0	25.5	13.7	79	S/SE
3-Mar-10	Wed	Cloudy with mist. Moderate east to southeasterly winds.	0	26.3	17.5	75.7	S/SE
4-Mar-10	Thu	Sunny intervals with fog patches. Moderate south to southeasterly winds.	0.1	24.9	19.5	80.2	S/SE
5-Mar-10	Fri	Moderate southerly winds, fresh over offshore waters at first.	Trace	26.7	17.5	74.2	S/SE
6-Mar-10	Sat	Mainly cloudy with one or two showers.	Trace	25.9	17.7	79	S/SE
7-Mar-10	Sun	Cloudy to overcast with a few rain and mist patches.	4.9	18.8	13.5	87	E/NE
8-Mar-10	Mon	It will be cool. Moderate to fresh east to northeasterly winds	0.5	13.2	12.7	92.5	E/NE