JOB NO.: TCS00670/13

AGREEMENT NO. CE 45/2008 (CE) LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

BASELINE MONITORING REPORT

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
16 August 2013	TCS00670/13/600/R0030v3	Ben Tam (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	15 July 2013	First Submission
2	16 July 2013	Amended against IEC's comments on 15 July 2013
3	16 August 2013	Amended against EPD's comments on 2 August 2013

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28 August 2013

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Attention: Mr Kelvin LEE

Dear Sirs

Agreement No. CE 42/2012 (EP)
Liantang/Heung Yuen Wai Boundary Control Point and Associated Works
Independent Environmental Checker – Investigation
Baseline Monitoring Report (Version 3)

With reference to the certified Baseline Monitoring Report (Version 3) by the ET Leader we received on 28 August 2013, please be noted that we have no adverse comments on the captioned submission. We herewith verify the Baseline Monitoring Report (Version 3) in accordance with Condition 5.3 of the Environmental Permit No. EP-404/2011.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995 8120 or by email to antony.wong@smec.com; or our Ms Winnie MA on tel. 3995 8138 or by email to winnie.ma@smec.com.

Yours faithfully
For and on behalf of
SMEC Asia Limited

Antony WONG
Independent Environmental Checker

cc	CEDD/BCP	-	Mr Pui Sang LI/Mr Eric CHAN	by fax: 2714 0103
	AECOM	-	Mr Pat LAM	by email
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EXECUTIVE SUMMARY

ES.01 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 45/2008 (CE) Liantang / Heung Yuen Wai Boundary Control Point and Associated Works* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-404/2011 (hereinafter referred as "the EP-404/2011" or "the EP").

ES.02 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as the Environmental Team for the Project (hereinafter referred as "the ET") to perform relevant EM&A programme, including baseline and impact environmental monitoring in accordance with the EM&A Manual approved under the Environmental Impact Assessment Ordinance (EIAO).

ES.03 According to the Approved EM&A Manual, air quality, noise and water quality monitoring should be required to be monitored during the construction phase of the Project. Pursuant to the EP, baseline environmental monitoring is required to be conducted prior to commencement of the construction works under the Project. For the EP stipulation, baseline monitoring including air quality, noise and water quality was conducted from ***13 June 2013*** to ***12 July 2013***. During the baseline monitoring period, no construction activities under the Project or other external influencing factors of significant concern were observed.

ES.04 This report summarizes the key findings and presents the process and rationale behind determining a set of Action and Limit Levels (A/L Levels) of air quality, construction noise and water quality based on the baseline data. These A/L Levels will serve as the yardsticks for assessing the acceptability of the environmental impact during construction phase of the Project Works impact monitoring. They are statistical in nature and derived according to the criteria set out in the Approved EM&A Manual.

ES.05 Results of the derived Action and Limit Levels for the air quality, noise and water quality are given in ***Tables ES-1, ES-2*** and ***ES-3*** as follows.

Table ES-1 Action and Limit Levels of Air Quality Monitoring

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	265	143	500	260
AM2	268	149	500	260
AM3	269	145	500	260
AM4a	267	148	500	260
AM5	268	143	500	260
AM6	269	148	500	260
AM7a	275	156	500	260
AM8	269	144	500	260
AM9a	271	151	500	260

Table ES-2 Action and Limit Levels of Construction Noise Monitoring

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 0700-1900 hours on normal weekdays	
NM1, NM2, NM3, NM4, NM5, NM6, NM7, NM8, NM9, NM10	When one or more documented complaints are received	75 dB(A)[Note 1]

Note 1: Acceptable Noise Levels for school should be reduced to 70 dB(A) and65 dB(A) during examination period

Note 2: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.

Table ES-3 Action and Limit Levels of Water Quality Monitoring

Parameter	Performance criteria	Monitoring Location				
		WM1	**WM2A**	**WM2B**	**WM3**	**WM4**
DO (mg/L)	Action Level	(*)4.23	(**)4.00	(*)4.74	(**)4.00	(*)4.14
	Limit Level	(#)4.19	(**)4.00	(#)4.60	(**)4.00	(#)4.08
Turbidity (NTU)	Action Level	51.3	24.9	11.4	13.4	35.2
		AND 120% of upstream control station of the same day				
	Limit Level	67.6	33.8	12.3	14.0	38.4
		AND 130% of upstream control station of the same day				
SS (mg/L)	Action Level	54.5	14.6	11.8	12.6	39.4
		AND 120% of upstream control station of the same day				
	Limit Level	64.9	17.3	12.4	12.9	45.5
		AND 130% of upstream control station of the same day				

Remarks:

*The Proposed **Action Level** of Dissolved Oxygen is adopted to be used 5%-ile of baseline data*

*)The Proposed **Action & Limit Level** of Dissolved Oxygen is used 4mg/L*

*The Proposed **Limit Level** of Dissolved Oxygen is adopted to be used 1%-ile of baseline data*

Notes:

All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

ES.6 In cases where exceedance of these criteria occurs, actions should be carried out in accordance with the Event Action Plan as shown the Approved EM&A Manual.

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 45/2008 (CE) Liantang / Heung Yuen Wai Boundary Control Point and Associated Works* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-404/2011 (hereinafter referred as "the EP-404/2011" or "the EP").

1.1.2 The Project consists of two main components: Construction of a Boundary Control Point (hereinafter referred as "BCP"); and Construction of a connecting road alignment. Layout plan of the Project is shown in ***Appendix A***.

1.1.3 The proposed BCP is located at the boundary with Shenzhen near the existing Chuk Yuen Village, comprising a main passenger building with passenger and cargo processing facilities and the associated customs, transport and ancillary facilities. The connecting road alignment consists of six main sections:

1) Lin Ma Hang to Frontier Closed Area (FCA) Boundary – this section comprises at-grade and viaducts and includes the improvement works at Lin Ma Hang Road;
2) Ping Yeung to Wo Keng Shan – this section stretches from the Frontier Closed Area Boundary to the tunnel portal at Cheung Shan and comprises at-grade and viaducts including an interchange at Ping Yeung;
3) North Tunnel – this section comprises the tunnel segment at Cheung Shan and includes a ventilation building at the portals on either end of the tunnel;
4) Sha Tau Kok Road – this section stretches from the tunnel portal at Wo Keng Shan to the tunnel portal south of Loi Tung and comprises at-grade and viaducts including an interchange at Sha Tau Kok and an administration building;
5) South Tunnel – this section comprises a tunnel segment that stretches from Loi Tung to Fanling and includes a ventilation building at the portals on either end of the tunnel as well as a ventilation building in the middle of the tunnel near Lau Shui Heung;
6) Fanling – this section comprises the at-grade, viaducts and interchange connection to the existing Fanling Highway.

1.1.4 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as an Independent Environmental Team (hereinafter referred as "the ET") to implement the relevant EM&A program in accordance with the approved EM&A Manual, as well as the associated duties. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions. Therefore, baseline monitoring was carried out between **13 June 2013** and **12 July 2013** for all parameters including air quality, noise and water quality before construction work commencement.

1.1.5 14 consecutive days of air quality and noise monitoring requirements had been undertaken at the all designated locations from **13 June 2013** to **12 July 2013**; also a 4-weeks water quality monitoring had been carried out at eleven locations as designated in the EM&A Manual from **14 June 2013** to **10 July 2013**. During the baseline monitoring period, there were no construction activities of this project or other external influencing factors of significant concern observed by the ET.

1.1.6 This Baseline Monitoring Report presents the details of the baseline study including project background, monitoring methodology, monitoring results, summary of findings, and Action/Limit (A/L) Levels established for subsequent use in the Project construction phase EM&A program.

1.2 REPORT STRUCTURE

1.2.1 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 SUMMARY OF BASELINE MONITORING REQUIREMENT

2.1 GENERAL

2.1.1 The Environmental Monitoring and Audit requirements are set out in the Approved 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 the Project.

2.1.2 This report presents the results obtained during the baseline monitoring program of air, noise and steam/river water between **13 June 2013** and **12 July 2013**. A summary of the baseline EM&A requirements for air, noise and water monitoring are presented in the sub-sections below.

2.2 MONITORING PARAMETERS

2.2.1 The EM&A baseline monitoring program shall cover the following environmental issues:
- Air quality;
- Construction noise; and
- Water quality.

2.2.2 A summary of the monitoring parameters is presented in ***Table 2-1*** below

Table 2-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler.
Noise	• Leq (30min) in normal working days (Monday to Saturday) 07:00-19:00 except public holiday; and • 3 sets of consecutive Leq (5min) on restricted hours i.e. 19:00 to 07:00 next day, and whole day of public holiday or Sunday
Water Quality	**In-situ Measurements** • Dissolved Oxygen Concentration (mg/L); • Dissolved Oxygen Saturation (%); • Turbidity (NTU); • pH unit; • Water depth (m); and • Temperature (℃).
	Laboratory Analysis • Suspended Solids (mg/L)

2.3 MONITORING LOCATIONS

2.3.1 The designated monitoring locations as recommended in the *EM&A Manual* are shown in ***Appendix B***. As access to some of the designated monitoring locations was questionable due to safety reason or denied by the landlords, alternative locations have been proposed. The proposal of alternative monitoring locations has been updated in the revised EM&A Programme which verified by IEC and certified by ET prior submitted to EPD on 10 July 2013.

Air Quality

2.3.2 Baseline monitoring for air quality should be conducted at nine air sensitive receivers (hereinafter referred as "ASR") as designated in the approved EM&A Manual. During site visit by the Contractor and ET, access to three designated air monitoring locations namely AM4, AM7 and AM9 were denied by the landlords of the ASR for HVS installation. Therefore, alternative locations namely AM4a, AM7a and AM9a are proposed based on the following criteria:

1) At the site boundary or such locations close to the major dust emission source;
2) Close to the sensitive receptors;
3) Take into account the prevailing meteorological conditions;
4) For monitoring location located in the vicinity of the ASRs, care shall be taken to cause minimal disturbance to the occupants during monitoring.
5) When positioning the HVS, the following points shall be noted:
   a. a horizontal platform with appropriate support to secure the samples against gusty

wind shall be provided;
b. no two samplers shall be placed less than 2m apart;
c. the distance between the HVS and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the HVS;
d. a minimum of 2 m separation from walls, parapets and penthouses is required for HVS at the rooftop;
e. a minimum of 2 m separation from any supporting structure, measures horizontally is required;
f. no furnace or incinerator flue is nearby;
g. airflow around the sampler is unrestricted;
h. the HVS is more than 20 m from the dripline;
i. any wire fence and gate to protect the HVS, shall not cause any obstruction during monitoring;
j. permission must be obtained to set up the HVS and to obtain access to the monitoring stations; and
k. a secured supply of electricity is needed to operate the HVS.

2.3.3 The proposed alternative locations of air quality monitoring are detailed in ***Table 2-2*** below.

Table 2-2 Proposed Alternative Location of Air Quality Monitoring

Station ID	Location nearby the Work Area	Conclusion and Consideration during site visit
AM4a	LMH to Frontier Closed Area	Alternative location is a village house located at about 160m east side of the original point AM4 in figure 2.1. AM4a is recommended as it is the closest residential location with secured electric access and covering the construction work at east side.
AM7a	Sha Tau Kok Road	Alternative location is the front yard of another village (nameless) aligns to Sha Tau Kok Road – Wo Hang Section proximity to Tai Tong Wu Village. AM7a is about 140m away from the original point AM7 in figure 2.1 but it is more close to the site area. AM7a is recommended as it is located just at the front of the residential area with secured electric access. It is more close to the construction site than original point, i.e. more sensitive.
AM9a	Fanling	Alternative location Nam Wa Po Village House No. 71 is located about 29m away from the original point AM9. AM9a is recommended as it is the closest residential location with secured electric access and covering the construction work area.

2.3.4 The proposed alternative locations are considered capable of effectively representing the baseline conditions at the impact monitoring locations. The proposal on alternative monitoring locations has been submitted to EPD upon agreement of the Engineer and certification by the IEC as stated in previous *Section 2.3.1*.

2.3.5 Hence, the sensitive receivers conducted the baseline air monitoring under the Project is listed in ***Table 2-3*** and shown in ***Appendix C***.

Table 2-3 Baseline Monitoring Stations - Air Quality

Station ID	ASR ID in EM&A Manual	Description	Works Area
AM1	TYH	Tsung Yuen Ha Village House No. 63	BCP
AM2	V1	Village House near Lin Ma Hang Road	LMH to Frontier Closed Area
AM3	TKL2	Ta Kwu Ling Fire Service Station of Ta Kwu Ling Village.	LMH to Frontier Closed Area
AM4a	KTW4	A village house located at about 160m east side of the original point AM4	LMH to Frontier Closed Area
AM5	PY1	Ping Yeung Village House	Ping Yeung to Wo Keng Shan
AM6	WKS7	Wo Keng Shan Village House	Ping Yeung to Wo Keng Shan
AM7a	NA	Another village (nameless) aligns to Sha Tau Kok Road – Wo Hang Section proximity to	Sha Tau Kok Road

Station ID	ASR ID in EM&A Manual	Description	Works Area
		Tai Tong Wu Village. The location is about 140m away from the original point AM7	
AM8	PKT2	Po Kat Tsai Village No. 4	Po Kat Tsai
AM9a	NWP1	Nam Wa Po Village House No. 71	Fanling

Construction Noise

2.3.6 Ten noise sensitive receivers (hereinafter referred "the NSR") are designated to be the monitoring stations in the EM&A Manual. They are listed in ***Table 2-4*** and shown in ***Appendix C***.

Table 2-4 Baseline Monitoring Stations - Construction Noise

Station ID	ASR ID in EM&A Manual	Description	Works Area
NM1	TYH	Tsung Yuen Ha Village House No. 63	BCP
NM2	V2	Village House near Lin Ma Hang Road	Lin Ma Hang to Frontier Closed Area
NM3	PY2	Ping Yeung Village House (facade facing northeast)	Ping Yeung to Wo Keng Shan
NM4	WKS6	Wo Keng Shan Village House	Ping Yeung to Wo Keng Shan
NM5	LT1	Village House, Loi Tung	Sha Tau Kok Road
NM6	TTW2	Tai Tong Wu Village House 2	Sha Tau Kok Rpad
NM7	PKT2	Po Kat Tsai Village	Po Kat Tsai
NM8	TH1	Village House, Tong Hang	Fanling
NM9	KT3	Village House, Kiu Tau Village	Fanling
NM10	NWP1	Nam Wa Po Village House No. 78	Fanling

Water Quality

2.3.7 The water quality baseline monitoring should be conducted at monitoring stations recommended in the EM&A Manual. Total eleven water quality monitoring locations including control stations and impact stations were designated for the Project.

2.3.8 Water quality monitoring stations WM1-Control, WM2B and WM3 have been identified and confirmed. However, access to other monitoring stations is questionable due to safety reason. Alternative monitoring locations are proposed according to the following criteria:

1) at locations close to and preferably at the boundary of the mixing zone of the major site activities as indicated in the EIA report, which are likely to have water quality impacts;
2) close to the sensitive receptors which are directly or likely to be affected;
3) for monitoring locations located in the vicinity of the sensitive receptors, care should be taken to cause minimal disturbance during monitoring;
4) two or more control stations which should be at locations representative of the project site in its undisturbed condition. Control stations should be located, as far as is practicable, both upstream and down-stream of the works area.

2.3.9 Moreover, control stations are necessary to compare the water quality from potentially impacted sites with the ambient water quality. Control stations shall be located within the same body of water as the impact monitoring stations but shall be outside the area of influence of the works and, as far as practicable, not affected by any other works.

2.3.10 The actual location (coordinate) was carried out baseline water quality monitoring are listed in ***Table2-5*** and shown in ***Appendix C***.

Table 2-5 Baseline Monitoring Stations - Water Quality

Station ID	Description	Location Designated in EM&A Manual		Proposed Location		Nature of the location
		Coordinates		Coordinates		
		Easting	Northing	Easting	Northing	
WM1	Downstream of Kong Yiu Channel	833669	845371	833679	845421	upstream 51m
WM1-Control	Upstream of Kong Yiu Channel	834185	845917	834185	845917	NA
WM2A	Downstream of River Ganges	834132	844433	834204	844471	downstream 81m
WM2A-Control	Upstream of River Ganges	835205	844200	835270	844243	upstream 78m
WM2B	Downstream of River Ganges	835435	843395	835433	843397	NA
WM2B-Control	Upstream of River Ganges	835846	843344	835835	843351	downstream 31m
WM3	Downstream of River Indus	836324	842405	836324	842407	NA
WM3-Control	Upstream of River Indus	836763	842426	836763	842400	downstream 26m
WM4	Downstream of Ma Wat Channel	833841	838345	833850	838338	upstream 11m
WM4–Control A	Kau Lung Hang Stream	834039	837669	834028	837695	downstream 28m
WM4–Control B	Upstream of Ma Wat Channel	833769	837406	833760	837395	upstream 15m

2.3.11 The water quality at both original and alternative locations is not anticipated to have significant difference. The proposal of alternative monitoring locations has been submitted to EPD upon agreement of the RE and verified by the IEC as stated in previous Section 2.3.1.

2.3.12 Since the changes of water monitoring locations were not significant (less than 100m), Figure 4.1 of the EM&A Manual would remain unchanged.

2.4 MONITORING FREQUENCY AND PERIOD

The requirements of baseline monitoring are stipulated in *Sections 2.1.5, 3.1.4* and *4.1.5* of the approved *EM&A Manual* and presented as follows.

Air Quality Monitoring

2.4.1 Monitoring frequency for air quality baseline monitoring is as follows:

- 1-Hour TSP — 3 sets of 1-Hour TSP monitoring shall be carried out daily for a period of at least two weeks.
- 24-Hour TSP — Continuous monitoring of 24-Hour shall be carried out daily for a period of at least two weeks.

Noise Monitoring

2.4.2 The baseline noise monitoring shall be carried out daily for a period of at least two weeks. The baseline noise levels for the time period between 0700 and 1900 hours on normal weekdays will be measured in terms of Leq (30 minutes). For all other time periods, i.e. restricted time period (19:00 to 07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours") will not be included in the baseline monitoring as they do not carry significance with the following rationales:

- Setting A/L Levels for construction noise is not based on baseline noise levels at any monitoring stations (refer to the following *Section 3.6: Action/Limit Levels and Event Action Plan*); and

- No construction activities are to be undertaken during the restricted hours, no construction noise impacts related to the works under the Project are therefore envisaged during the restricted hours.

Water Quality Monitoring

2.4.3 The baseline monitoring frequency shall be 3 days per week, for at least 4 weeks prior to the commencement of construction works. The interval between two sets of monitoring shall not be less than 36 hours.

2.5 MONITORING EQUIPMENT

Air Quality Monitoring

2.5.1 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.

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

2.5.3 All equipment to be used for baseline air quality monitoring is listed in ***Table 2-6***.

Table 2-6 Air Quality Monitoring Equipment

Equipment	Model
24-Hr TSP	
High Volume Air Sampler	TISCH High Volume Air Sampler, HVS Model TE-5170
Calibration Kit	TISCH Model TE-5028A
1-Hour TSP	
Portable Dust Meter	Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter

Wind Data Monitoring Equipment

2.5.4 According to the approved EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:

1) The wind sensors should be installed 10 m above ground so that they are clear of obstructions or turbulence caused by buildings.
2) The wind data should be captured by a data logger. The data shall be downloaded for analysis at least once a month.
3) The wind data monitoring equipment should be re-calibrated at least once every six months.
4) Wind direction should be divided into 16 sectors of 22.5 degrees each.

2.5.5 In order to do so, ET has liaised with the landlords of the successful granted HVS installation premises. However, the owners rejected to provide premises for wind data monitoring equipment installation.

2.5.6 In under this situation, the ET proposed alternative methods to obtain representative wind data. Meteorological information as extracted from "the Hong Kong Observatory Ta Kwu Ling Station" is alternative method to obtain representative wind data. For Ta Kwu Ling Station, it is located nearby the Project site. Moreover, this station is situated the sea level above 15mPD. The station's wind data monitoring equipment is set above the existing ground ten meters in compliance with the general setting up requirement. Furthermore, this station also can be to provide the humidity, rainfall, and air pressure and temperature etc. meteorological information. In Hong Kong of a lot development projects, weather information extracted from Hong Kong Observatory is common alternative method if weather station installation not allowed.

Noise Monitoring

2.5.7 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}.

2.5.8 Noise monitoring equipment to be used for baseline monitoring is listed in ***Table 2-7***.

Table 2-7 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238 or Rion NL-14
Calibrator	Rion NC-73 / B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer

2.5.9 Sound level meters listed above comply with the *International Electrotechnical Commission Publications 651: 1979 (Type 1)* and *804: 1985 (Type 1)* specifications, as recommended in TM issued under the NCO. The acoustic calibrator and sound level meter to be used in the baseline monitoring will be calibrated yearly..

Water Quality Monitoring

2.5.10 DO and water temperature should be measured in-situ by a DO/temperature meter. The instrument should be portable and weatherproof using a DC power source. It should have a membrane electrode with automatic temperature compensation complete with a cable. The equipment should be capable of measuring:

- a DO level in the range of 0-20 mg/l and 0-200% saturation; and
- a temperature of between 0 and 45 degree Celsius.

2.5.11 A portable pH meter capable of measuring a range between 0.0 and 14.0 should be provided to measure pH under the specified conditions accordingly to the APHA Standard Methods.

2.5.12 The instrument should be portable and weatherproof using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU.

2.5.13 A portable, battery-operated echo sounder or tape measure will be used for the determination of water depth at each designated monitoring station as appropriate.

2.5.14 A water sampler e.g. Kahlsico Water Sampler, which is a transparent PVC cylinder with capacity not less than 2 litres, will be used for water sampling if water depth over than 0.5m. For sampling from very shallow water depths e.g. <0.5 m, water sample collection will be directly from water surface below 100mm use sampling plastic bottle to avoid inclusion of bottom sediment or humus. Moreover, Teflon/stainless steel bailer or self-made sampling buckets maybe used for water sampling. The equipment used for sampling will be depended the sampling location and depth situations.

2.5.15 Water samples for laboratory measurement of SS will be collected in high density polythene bottles, packed in ice (cooled to 4 ºC without being frozen), and delivered to the laboratory in the same day as the samples were collected.

2.5.16 Analysis of suspended solids should be carried out in a HOKLAS or other accredited laboratory. Water samples of about 1L should be collected at the monitoring stations for carrying out the laboratory suspended solids determination. The SS determination work should start within 24 hours after collection of the water samples. The SS analyses should follow the *APHA Standard Methods 2540D* with Limit of Reporting of 2 mg/L.

2.5.17 Water quality monitoring equipment used in the baseline monitoring is listed in **Table 2-8**. Suspended solids (SS) analysis is carried out by a local HOKLAS-accredited laboratory, namely *ALS Technichem (HK) Pty Ltd*.

Table 2-8 Water Quality Monitoring Equipment

Equipment	Model
Water Depth Detector	Eagle Sonar or tape measures
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends or teflon/stainless steel bailer or self-made sampling bucket
Thermometer & DO meter	YSI 550A Handheld Dissolved Oxygen Instrument
pH meter	The EcoSense® pH10A pen-style instrument
Turbidimeter	Hach 2100Q
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-liter plastic cool box with Ice pad

2.6 DERIVATION OF ACTION/LIMIT (A/L) LEVELS

2.6.1 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 and water quality are shown in ***Table 2-9***, ***2-10*** and ***2-11*** respectively.

Table 2-9 Derivation of Action and Limit Levels for Air Quality

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

Table 2-10 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 2-11 Derivation of Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/l	5 percentile of baseline data	4 mg/L or 1 percentile of baseline data
SS in mg/l	95 percentile of baseline data or 120% of upstream control station of the same day	99 percentile of baseline data or 130% of upstream control station of the same day
Turbidity in NTU	95 percentile of baseline data or 120% of upstream control station of the same day	99 percentile of baseline data or 130% of upstream control station of the same day

Notes:
1. *For DO measurement, non-compliance occurs when monitoring result is lower than the limits.*
2. *For SS and turbidity, non-compliance of water quality results when monitoring results is higher than the limits.*
3. *All the figures given in the table are used for reference only and the EPD may amend the figures whenever necessary.*

3 BASELINE MONITORING METHDOLOGY

3.1 GENERAL

3.1.1 The baseline monitoring program of air, noise and water were conducted between 13 June 2013 and 12 July 2013. During the baseline monitoring period, there were no construction activities of this project or other external influencing factors of significant concern observed by the ET.

3.2 LOCATION OF BASELINE MONITORING

3.2.1 Baseline air quality, noise and water quality monitoring has been undertaken at the all monitoring stations between **13 June 2013** and **12 July 2013**; also a 4-week baseline water quality monitoring program has been carried out at eleven designated locations from **14 June 2013** to **10 July 2013**. The detailed information of monitoring stations to be referred to ***Tables 2-3***, ***2-4*** and ***2-5***, and the graphical plot of monitoring locations is shown in ***Appendix C*** in this report.

3.3 MONITORING EQUIPMENT AT BASELINE MONITORING

3.3.1 All the monitoring equipment to be used in the EM&A program as listed in ***Tables 2-6***, ***2-7*** and ***2-8*** has been agreed with the IEC prior to commencement of the baseline monitoring.

3.4 MONITORING PROCEDURES

Air Quality

1-hour TSP

3.4.1 The 1-Hour TSP monitor, a Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter was used for baseline monitoring, which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90^0 light scattering. The 1-hour TSP monitor consisted of the following:

a. A pump to draw sample aerosol through the optic chamber where TSP is measured;
b. A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
c. A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

3.4.2 The 1-hour TSP meter used is within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event. Operation of the 1-hour TSP meter was follow manufacturer's Operation and Service Manual. A valid calibration certificate is attached in ***Appendix D***.

24-hour TSP

3.4.3 The equipment used for 24-hour TSP measurement is a Tisch Environmental, Inc. Model TE-5170 TSP high volume air sampling system, which complied with EPA Code of Federal Regulation, Appendix B to Part 50. The High Volume Air Sampler (HVS) consists of the following:

a. An anodized aluminum shelter;
b. A 8"x10" stainless steel filter holder;
c. A blower motor assembly;
d. A continuous flow/pressure recorder;
e. A motor speed-voltage control/elapsed time indicator;
f. A 7-day mechanical timer, and
g. A power supply of 220v/50 hz

3.4.4 Prior of 24-hour TSP monitoring, the HVS was calibrated in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5028A). The 24-hour TSP Monitoring using the HVS was also processed in accordance with the manufacturer's Operations Manual. A valid calibration certificate of the calibration kit with the

certificate of HVS calibrated is attached in ***Appendix D***.

3.4.5 24-hour TSP was collected by the ET on filters of HVS and quantified by a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (ALS), upon receipt of the samples. The ET keeps all the sampled 24-hour TSP filters in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25°C, for six months prior to disposal.

Construction Noise

3.4.6 Sound level meter listed above comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications, as recommended in Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), which was used for baseline noise monitoring. A valid of calibration certificates including sound level meter and an acoustic were shown in ***Appendix D***.

3.4.7 The noise measurement was performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq(30min) in six consecutive Leq(5 min) measurements were used as the monitoring parameter throughout the baseline monitoring period.

3.4.8 During the baseline monitoring, the sound level meter was mounted on a tripod at a height of about 1.2 m and placed at the monitoring locations and oriented such that the microphone was pointed to the site with the microphone facing perpendicular to the line of sight. The windshield was fitted for the measurement. For the baseline noise monitoring, all monitoring stations were conducted 1 m from the exterior of the building façade.

3.4.9 Prior baseline noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The calibration level from before and after the noise measurement agrees to within 1.0dB.

3.4.10 During the noise measurement, a portable wind speed meter was used to check wind speed (m/s). For baseline noise monitoring, no wind speed was exceeding 5m/s or gusts exceeding 10m/s. Also, noise measurement in time was no fog and rain.

Water Quality

3.4.11 Water quality monitoring was conducted at the eleven designated locations. The sampling and in-situ measurement process are below:

Sampling Procedure

3.4.12 A Digital Global Positioning System (GPS) was used to identify the designated monitoring stations. Prior to water sampling, a portable, battery-operated echo sounder or tape measure was used for the determination of water depth at each station. At each station, water samples were collected from 0.1m below water surface or water surface to prevent the river bed sediment for stirring.

3.4.13 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.

3.4.14 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.

3.4.15 A 'Willow' 33-liter 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℃ as possible without being frozen. Samples collected were delivered to the laboratory upon collection.

In-situ Measurement

3.4.16 YSI 550A Handheld Dissolved Oxygen Instrument was used for water in-situ measures, which automates the measurements and data logging of temperature, dissolved oxygen and dissolved oxygen saturation. Before each round of monitoring, the dissolved oxygen probe was calibrated by the wet bulb method.

3.4.17 A portable EcoSense® pH10A pen-style instrument was used for in-situ pH measurement. The pH meter is capable of measuring pH in the range of 0 – 14 and readable to 0.1. Standard buffer solutions of pH 7 and pH 10 are used for calibration of the instrument before and after measurement.

3.4.18 A portable Hach 2100Q Turbidimeter was used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU. StablCal® Standards 10NTU and 100NTU are used for calibration of the instrument before and after measurement.

3.4.19 The all in-situ measurement equipment was calibrated by HOKLAS accredited laboratory of three month interval. Valid certificates are shown in ***Appendix D***.

Laboratory Analysis

3.4.20 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 was determined by the laboratory upon receipt of the water samples using *APHA Standard Methods 2540D*. HOKLAS-accreditation certificate of the testing laboratory is provided in ***Appendix E***. The SS determination is started within 48 hours upon receipt, which is well within the required maximum sample storage time of the parameter of 7 days.

3.5 DATA MANAGEMENT AND DATA QA/QC CONTROL

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

3.5.2 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into a computerized database properly maintained by the ET. The laboratory results were input directly into the computerized database and checked by personnel other than those who input the data.

3.5.3 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 tests

4 BASELINE MONITORING RESULTS

4.1 GENERAL

4.1.1 The baseline monitoring schedules are presented in ***Appendix F*** and the monitoring results are detailed in the following sub-sections.

4.2 RESULTS OF AIR QUALITY MONITORING

4.2.1 Baseline air quality monitoring was carried out form **13 June 2013** to **12 July 2013**. The results for 24-hour and 1-hour TSP are summarized in ***Tables 4-1 to 4-9***. The 24-hour TSP data are shown in ***Appendix G***.

Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results – AM1

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
29-Jun-13	19	27-Jun-13	12:13	27	28	31
30-Jun-13	23	28-Jun-13	13:15	30	33	31
1-Jul-13	20	29-Jun-13	10:15	27	29	30
2-Jul-13	17	30-Jun-13	12:45	23	22	21
3-Jul-13	16	1-Jul-13	10:55	20	21	23
4-Jul-13	22	2-Jul-13	10:00	22	24	26
5-Jul-13	20	3-Jul-13	13:41	29	23	21
6-Jul-13	17	4-Jul-13	13:45	19	21	25
7-Jul-13	16	5-Jul-13	14:30	13	17	19
8-Jul-13	14	6-Jul-13	13:14	12	13	14
9-Jul-13	19	7-Jul-13	14:30	14	15	17
10-Jul-13	18	8-Jul-13	10:10	25	27	29
11-Jul-13	28	9-Jul-13	14:30	25	27	30
12-Jul-13	24	10-Jul-13	10:50	24	26	29
Average (Range)	**20 (14-28)**	Average (Range)		**23 (12-33)**		

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results – AM2

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
27-Jun-13	32	27-Jun-13	12:25	22	23	25
28-Jun-13	25	28-Jun-13	13:22	33	35	37
29-Jun-13	30	29-Jun-13	10:21	22	24	25
30-Jun-13	24	30-Jun-13	12:40	19	20	21
1-Jul-13	22	1-Jul-13	10:45	18	20	21
2-Jul-13	26	2-Jul-13	10:15	19	21	22
3-Jul-13	22	3-Jul-13	13:54	27	24	29
4-Jul-13	23	4-Jul-13	13:30	15	16	18
5-Jul-13	40	5-Jul-13	14:50	39	40	42
6-Jul-13	26	6-Jul-13	13:00	25	28	29
7-Jul-13	34	7-Jul-13	14:39	18	20	20
8-Jul-13	37	8-Jul-13	10:00	31	33	36
9-Jul-13	33	9-Jul-13	14:21	33	34	36
10-Jul-13	31	10-Jul-13	11:15	33	33	36
Average (Range)	**29 (22-40)**	Average (Range)		**27 (15-42)**		

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results – AM3

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
27-Jun-13	23	27-Jun-13	12:30	25	26	28
28-Jun-13	20	28-Jun-13	13:30	48	50	48
29-Jun-13	18	29-Jun-13	10:30	35	37	33
30-Jun-13	20	30-Jun-13	12:30	14	15	13
1-Jul-13	20	1-Jul-13	10:40	15	17	18
2-Jul-13	17	2-Jul-13	13:17	13	15	16
3-Jul-13	19	3-Jul-13	14:15	28	24	32
4-Jul-13	25	4-Jul-13	10:20	17	18	18
5-Jul-13	20	5-Jul-13	09:35	22	27	29
6-Jul-13	24	6-Jul-13	10:00	21	22	22
7-Jul-13	19	7-Jul-13	15:00	32	37	35
8-Jul-13	29	8-Jul-13	11:20	53	49	41
9-Jul-13	30	9-Jul-13	14:15	39	42	44
10-Jul-13	34	10-Jul-13	11:24	30	33	34
Average (Range)	**23 (17-34)**	Average (Range)		**29 (13-53)**		

Table 4-4 Summary of 24-hour and 1-hour TSP Monitoring Results – AM4a

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
13-Jun-13	23	13-Jun-13	10:50	35	35	34
14-Jun-13	22	14-Jun-13	12:12	33	33	36
15-Jun-13	20	15-Jun-13	11:00	33	33	35
16-Jun-13	21	16-Jun-13	10:00	20	21	22
17-Jun-13	22	17-Jun-13	10:22	22	25	31
18-Jun-13	24	18-Jun-13	10:30	13	14	14
19-Jun-13	33	19-Jun-13	10:15	26	27	28
20-Jun-13	37	20-Jun-13	13:04	33	36	37
21-Jun-13	39	21-Jun-13	13:30	13	16	16
22-Jun-13	29	22-Jun-13	10:00	18	19	19
23-Jun-13	30	23-Jun-13	10:45	19	20	22
24-Jun-13	26	24-Jun-13	10:55	20	29	22
25-Jun-13	30	25-Jun-13	11:27	39	42	45
26-Jun-13	26	26-Jun-13	09:45	20	22	24
Average (Range)	**27 (20-39)**	Average (Range)		**26 (13-45)**		

Table 4-5 Summary of 24-hour and 1-hour TSP Monitoring Results – AM5

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
13-Jun-13	24	13-Jun-13	10:45	31	33	33
14-Jun-13	16	14-Jun-13	11:00	35	36	35
15-Jun-13	15	15-Jun-13	13:09	35	37	38
16-Jun-13	17	16-Jun-13	10:09	22	24	23
17-Jun-13	14	17-Jun-13	10:35	31	33	28
18-Jun-13	15	18-Jun-13	13:35	16	17	17
19-Jun-13	33	19-Jun-13	13:20	16	18	19
20-Jun-13	31	20-Jun-13	09:58	24	27	29
21-Jun-13	21	21-Jun-13	10:24	17	19	20

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
22-Jun-13	20	22-Jun-13	09:54	16	18	19
23-Jun-13	17	23-Jun-13	10:53	22	25	26
24-Jun-13	18	24-Jun-13	10:47	28	30	31
25-Jun-13	21	25-Jun-13	11:30	40	46	47
26-Jun-13	19	26-Jun-13	09:47	24	25	25
Average (Range)	**20 (14-33)**	Average (Range)		**27 (16-47)**		

Table 4-6 Summary of 24-hour and 1-hour TSP Monitoring Results – AM6

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
13-Jun-13	24	13-Jun-13	13:12	32	32	34
14-Jun-13	23	14-Jun-13	10:45	29	29	30
15-Jun-13	23	15-Jun-13	11:20	33	34	36
16-Jun-13	25	16-Jun-13	13:30	22	24	25
17-Jun-13	37	17-Jun-13	10:57	29	35	33
18-Jun-13	27	18-Jun-13	13:28	16	17	19
19-Jun-13	39	19-Jun-13	13:15	25	26	28
20-Jun-13	37	20-Jun-13	12:57	38	40	42
21-Jun-13	22	21-Jun-13	13:09	26	28	30
22-Jun-13	21	22-Jun-13	09:40	31	33	35
23-Jun-13	20	23-Jun-13	11:12	20	23	26
24-Jun-13	21	24-Jun-13	10:29	25	26	27
25-Jun-13	39	25-Jun-13	11:05	35	38	40
26-Jun-13	32	26-Jun-13	10:00	26	27	29
Average (Range)	**28 (20-39)**	Average (Range)		**29 (16-42)**		

Table 4-7 Summary of 24-hour and 1-hour TSP Monitoring Results – AM7a

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
13-Jun-13	46	13-Jun-13	13:27	35	37	35
14-Jun-13	55	14-Jun-13	13:00	30	31	33
15-Jun-13	43	15-Jun-13	11:34	33	33	35
16-Jun-13	36	16-Jun-13	13:15	17	18	19
17-Jun-13	38	17-Jun-13	11:16	31	42	34
18-Jun-13	41	18-Jun-13	10:15	18	19	21
19-Jun-13	34	19-Jun-13	09:55	56	58	58
20-Jun-13	36	20-Jun-13	09:45	54	56	59
21-Jun-13	38	21-Jun-13	09:51	33	35	38
22-Jun-13	33	22-Jun-13	09:24	48	52	52
23-Jun-13	34	23-Jun-13	11:30	34	38	39
24-Jun-13	41	24-Jun-13	10:12	30	32	33
25-Jun-13	38	25-Jun-13	10:58	36	40	42
26-Jun-13	40	26-Jun-13	10:09	43	45	46
Average (Range)	**40 (33-55)**	Average (Range)		**38 (17-59)**		

Table 4-8 Summary of 24-hour and 1-hour TSP Monitoring Results – AM8

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
27-Jun-13	22	27-Jun-13	12:57	29	32	33
28-Jun-13	29	28-Jun-13	14:00	58	60	60
29-Jun-13	23	29-Jun-13	13:52	29	30	32
30-Jun-13	27	30-Jun-13	12:10	23	24	27
1-Jul-13	21	1-Jul-13	10:00	24	27	28
2-Jul-13	17	2-Jul-13	14:00	36	31	39
3-Jul-13	21	3-Jul-13	13:23	27	29	32
4-Jul-13	23	4-Jul-13	10:00	16	17	18
5-Jul-13	27	5-Jul-13	09:50	24	25	28
6-Jul-13	20	6-Jul-13	09:40	19	21	24
7-Jul-13	22	7-Jul-13	15:15	22	23	24
8-Jul-13	21	8-Jul-13	13:00	24	26	30
9-Jul-13	21	9-Jul-13	14:36	26	25	22
10-Jul-13	20	10-Jul-13	10:23	26	27	28
Average (Range)	**22 (17-29)**	Average (Range)		**29 (16-60)**		

Table 4-9 Summary of 24-hour and 1-hour TSP Monitoring Results – AM9a

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st Measurement	2nd Measurement	3rd Measurement
13-Jun-13	55	13-Jun-13	10:30	29	29	30
14-Jun-13	45	14-Jun-13	09:15	35	35	35
15-Jun-13	35	15-Jun-13	13:52	33	35	36
16-Jun-13	36	16-Jun-13	09:30	16	17	18
17-Jun-13	28	17-Jun-13	09:41	31	37	33
18-Jun-13	24	18-Jun-13	10:00	36	29	31
19-Jun-13	20	19-Jun-13	09:30	33	36	37
20-Jun-13	23	20-Jun-13	10:00	35	36	38
21-Jun-13	42	21-Jun-13	09:30	29	31	26
22-Jun-13	21	22-Jun-13	09:00	33	30	34
23-Jun-13	22	23-Jun-13	12:00	24	27	21
24-Jun-13	27	24-Jun-13	10:00	26	29	30
25-Jun-13	43	25-Jun-13	10:45	65	67	69
26-Jun-13	38	26-Jun-13	10:15	30	32	36
Average (Range)	**33 (20-55)**	Average (Range)		**33 (16-69)**		

4.2.2 The meteorological data during the baseline monitoring period are summarized in ***Appendix H***.

Action/Limit Levels for Air Quality

4.2.3 Following the criteria shown in ***Table 2-9*** of this report, the proposed Action and Limit Levels for 24-hour and 1-hour TSP are listed in ***Table 4-10***.

Table 4-10 Action and Limit Levels for Air Quality Monitoring for all Stations

Monitoring Station	Action Level (μg /m³)		Limit Level (μg/m³)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AM1	265	143	500	260
AM2	268	149	500	260
AM3	269	145	500	260

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AM4a	267	148	500	260
AM5	268	143	500	260
AM6	269	148	500	260
AM7a	275	156	500	260
AM8	269	144	500	260
AM9a	271	151	500	260

Note: 1-hour & 24-hour TSP Action Level = (Baseline × 1.3 + Limit level)/2

4.3 RESULTS OF NOISE MONITORING

4.3.1 The baseline noise monitoring was undertaken form **13 June 2013** to **10 July 2013**. The designated locations including NM3, NM4, NM5, NM6, NM8, NM9 and NM10 is the first batch baseline noise monitoring, those locations are commenced on 13 June 2013 and completed on 27 June 2013. Since whole daytime raining was on 15 June 2013, therefore no baseline noise measurement was undertaken at NM3, NM4, NM5, NM6, NM8, NM9 and NM10 in accordance with the noise monitoring criteria. The second batch baseline monitoring for the other designated locations such as NM1, NM2 and NM7, was commenced again on **27 June 2013** and completed on **10 July 2013**. The measurement data are shown in ***Appendix F*** and summarized in ***Table 4-11***.

Table 4-11 Summaries of Noise Monitoring Results

Monitoring Station	Normal day (Monday to Saturday): Daytime 0700-1900, Leq(30min)			Public Holiday or Sunday: Daytime 0700-1900, Leq(5min)		
	Mean	Min	Max	Mean	Min	Max
NM1	53	45	60	50	42	60
NM2	57	51	64	48	41	54
NM3	56	51	67	53	48	59
NM4	59	54	66	53	47	64
NM5	56	54	59	56	54	58
NM6	62	58	65	51	49	53
NM7	57	49	63	54	40	61
NM8	61	54	67	59	56	63
NM9	63	58	***76***	59	49	***74***
NM10	63	56	70	56	52	60

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

4.3.2 The baseline noise monitoring, sound pressure level exceeded the criteria such as 75dB(A) normal daytime and 70dB(A) restricted hour is recorded at monitoring station NM9 only. Review NM9 location, it is situated nearly train railway. The train noise should impact the monitoring station.

Action/Limit Levels for Noise

4.3.3 The Action and Limit Levels for construction noise are illustrated in ***Table 4-12***.

Table 4-12 Action and Limit Levels of Construction Noise Monitoring

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

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

4.4 RESULTS OF WATER QUALITY MONITORING

4.4.1 The baseline water quality monitoring at eleven (11) designated monitoring stations was

performed a 4 weeks as between **14 June 2013** and **10 July 2013**. The monitoring results including Dissolved Oxygen, Turbidity, Suspended Solids and pH at each designated monitoring station are summarized in ***Tables 4-13*** to ***4-15***. Detailed monitoring results including in-situ measurements and laboratory analysis data are shown in ***Appendix H***.

Table 4-13 Summary of Water Quality Monitoring Results - Dissolved Oxygen, mg/L

Date	Sampling Location										
	WM1	WM1-Control	WM2A	WM2A-Control	WM2B	WM2B-Control	WM3	WM3-Control	WM4	WM4-Control A	WM4-Control B
14-Jun-13	4.28	4.64	4.51	5.62	4.96	4.68	4.08	3.66	4.62	4.78	4.62
17-Jun-13	4.29	3.70	4.07	4.05	4.90	5.47	3.77	3.39	4.07	4.08	4.28
19-Jun-13	4.18	4.27	3.34	5.40	4.57	4.16	4.27	4.12	4.20	4.82	4.73
21-Jun-13	4.73	4.48	4.14	3.86	4.88	4.82	4.19	4.02	4.65	4.28	5.20
24-Jun-13	4.76	4.76	5.38	5.52	6.72	6.91	6.50	5.88	7.01	7.22	5.16
26-Jun-13	6.53	6.43	6.07	5.62	6.47	4.50	5.92	4.89	6.60	6.60	6.61
29-Jun-13	6.49	6.66	7.85	6.51	7.88	5.92	6.91	5.63	7.22	7.01	5.54
2-Jul-13	5.61	4.91	6.35	6.37	7.22	6.11	7.33	5.39	7.25	6.62	6.03
4-Jul-13	4.72	5.83	5.94	5.10	7.76	7.81	5.81	6.84	6.73	5.88	6.12
6-Jul-13	5.54	5.97	5.64	4.40	6.90	5.93	6.13	3.92	6.15	6.13	5.61
8-Jul-13	4.99	5.12	5.45	5.31	6.11	3.64	5.54	4.92	5.66	5.76	4.95
10-Jul-13	5.40	5.48	5.07	6.46	6.25	4.45	5.78	5.06	6.03	6.00	5.48
5%-ile	4.23	4.01	3.74	3.96	4.74	3.92	3.94	3.54	4.14	4.19	4.46
1%-ile	4.19	3.76	3.42	3.88	4.60	3.69	3.80	3.42	4.08	4.10	4.31
Average	5.12	5.18	5.32	5.35	6.22	5.36	5.52	4.81	5.85	5.76	5.36
Min	4.18	3.70	3.34	3.86	4.57	3.64	3.77	3.39	4.07	4.08	4.28
Max	6.53	6.66	7.85	6.51	7.88	7.81	7.33	6.84	7.25	7.22	6.61

Table 4-14 Summary of Water Quality Monitoring Results – Turbidity, NTU

Date	Sampling Location										
	WM1	WM1-Control	WM2A	WM2A-Control	WM2B	WM2B-Control	WM3	WM3-Control	WM4	WM4-Control A	WM4-Control B
14-Jun-13	16.30	6.90	4.31	56.30	49.35	60.30	26.95	43.60	7.20	40.95	61.45
17-Jun-13	14.20	5.92	4.66	2.38	2.16	5.25	3.27	6.38	13.90	2.48	9.00
19-Jun-13	19.15	7.65	9.25	7.41	10.01	0.96	14.10	11.20	26.10	21.75	30.15
21-Jun-13	11.50	12.30	3.00	3.13	2.82	2.16	2.39	4.23	39.20	2.51	9.68
24-Jun-13	321.00	689.50	61.50	68.70	53.35	44.05	94.05	77.85	53.65	88.75	146.50
26-Jun-13	11.15	10.05	10.55	4.48	12.50	3.00	2.64	3.30	27.90	7.56	49.30
29-Jun-13	17.10	9.02	2.39	34.50	9.44	0.45	1.41	4.74	10.15	1.29	14.10
2-Jul-13	26.45	15.35	11.40	20.75	0.18	2.00	0.92	2.91	30.20	9.61	22.50
4-Jul-13	17.45	11.35	9.63	13.60	1.12	0.87	6.64	12.25	18.30	6.65	11.00
6-Jul-13	17.80	17.25	3.91	20.45	3.08	1.01	12.55	11.30	17.85	12.55	19.10
8-Jul-13	15.80	10.35	36.00	15.25	1.90	1.29	1.64	4.85	15.05	9.95	12.75
10-Jul-13	71.65	26.50	10.95	18.65	2.08	1.42	1.96	2.01	19.85	6.78	14.40
95%-ile	51.3	22.3	24.9	28.3	11.4	4.2	13.4	11.8	35.2	17.6	40.7
99%-ile	67.6	25.7	33.8	33.3	12.3	5.0	14.0	12.2	38.4	20.9	47.6
Average	22.2	12.6	10.2	14.1	4.5	1.8	4.7	6.3	21.9	8.1	19.2
Min	11.2	5.9	2.4	2.4	0.2	0.5	0.9	2.0	10.2	1.3	9.0
Max	71.7	26.5	36.0	34.5	12.5	5.2	14.1	12.3	39.2	21.8	49.3

Remark: The shaded data are considered as abnormal under the influence of rainstorm.

Table 4-15 Summary of Water Quality Monitoring Results – Suspended Solids, mg/L

Date	Sampling Location										
	WM1	WM1-Control	WM2A	WM2A-Control	WM2B	WM2B-Control	WM3	WM3-Control	WM4	WM4-Control A	WM4-Control B
14-Jun-13	34.5	7.5	7.5	86.0	72.5	99.5	46.0	91.5	12.0	62.0	89.0
17-Jun-13	38.5	18.5	18.0	10.0	7.5	6.5	7.0	22.5	23.5	6.5	7.5
19-Jun-13	20.0	5.5	4.5	4.5	6.5	7.5	12.0	8.5	19.5	13.0	20.5
21-Jun-13	23.5	25.5	5.5	10.0	2.5	3.0	6.0	5.5	47.0	5.0	17.0
24-Jun-13	270.0	447.0	46.5	44.5	27.5	28.0	44.5	34.5	32.0	49.5	188.0
26-Jun-13	12.0	8.0	7.0	4.5	9.5	2.5	4.0	4.0	19.5	9.5	55.0
29-Jun-13	18.5	7.5	3.5	75.0	11.0	2.0	3.5	3.0	14.0	3.5	16.5
2-Jul-13	31.5	9.5	7.5	5.5	3.5	2.0	2.0	2.5	18.5	9.0	15.5
4-Jul-13	16.0	4.0	4.5	4.0	2.0	2.0	5.5	4.5	20.5	8.0	13.5
6-Jul-13	21.0	30.0	10.0	62.5	12.5	3.0	13.0	10.0	30.0	27.0	19.5
8-Jul-13	27.0	5.0	10.5	7.0	2.0	2.0	2.5	7.5	20.5	15.0	18.5
10-Jul-13	67.5	8.5	9.5	7.5	2.0	2.0	3.0	3.5	26.5	4.5	17.0
95%-ile	54.5	28.0	14.6	69.4	11.8	7.1	12.6	16.9	39.4	21.6	39.5
99%-ile	64.9	29.6	17.3	73.9	12.4	7.4	12.9	21.4	45.5	25.9	51.9
Average	27.6	12.2	8.1	19.1	5.9	3.2	5.9	7.2	24.0	10.1	20.1
Min	12.0	4.0	3.5	4.0	2.0	2.0	2.0	2.5	14.0	3.5	7.5
Max	67.5	30.0	18.0	75.0	12.5	7.5	13.0	22.5	47.0	27.0	55.0

Remark: The shaded data are considered as abnormal under the influence of rainstorm.

4.4.2 Having reviewed on the monitoring results during the baseline period, abnormally high Turbidity and SS results were found on 14 and 24 June 2013 in which Black Rainstorm Warning and severe rainstorm was hoisted respectively. According to statistics, these "distant" results may indicate faulty data, erroneous procedures, or areas where a certain theory might not be valid, and should be treated as the "outliers" and excluded from statistical calculation of the percentiles for establishment of the Action/ Limit Levels. In order to set up a more stringent limit, these two days data would be discarded before determining the Action/ Limit Level, i.e. when calculating the 95%-ile and 99%-ile of baseline data.

4.4.3 According to the EM&A Manual, **EITHER** the 95%-ile and 99%-ile of baseline data **OR** the 120% and 130% of upstream control station of the same day would trigger 'Exceedance Actions' of the Event and Action Plan. It is important to point out that the Turbidity and SS data in both control and impact stations may synchronic increase significantly under rainy or typhoon conditions, due to significant increase of the water flow in the monitoring streams to stir up the sediment and significant increase of soil erosion resulting in subsequent increase of Turbidity and SS brought by rain water to the streams etc. In this situation, even though the upstream SS and Turbidity levels indicate full compliance with the 120% and 130% criteria, the exceedances of Action and Limit levels will inevitably trigger 'Exceedance Actions'. It is considered that the EM&A Manual poses extremely stringent '**OR'** requirements for establishment of environmental performance criteria for SS and turbidity especially during rainy day.

4.4.4 It is therefore proposed that that the '**OR'** requirement in the EM&A Manual for Turbidity and SS be relaxed to an '**AND'** condition as follows:

'95%-ile of baseline data <u>AND</u> 120% of upstream control station of the same day' and
'99%-ile of baseline data <u>AND</u> 130% of upstream control station of the same day.'

4.4.5 Moreover, the baseline SS and turbidity conditions at the monitoring locations may differ significantly during season changes and the environmental performance criteria may need to be reviewed regularly or even re-established if it is evident that the baseline conditions have changed significantly. It is beneficial to the project if the proposed **'AND'** condition is adopted as the environmental performance criteria would also cater to the season changes.

<u>Action/Limit Levels for Water Quality</u>

4.4.6 The Action and Limit Levels for water quality are illustrated in ***Table 4-16***. The proposed

environmental performance criteria are recommended according to ***Table 2-11*** of this report.

Table 4-16 Action and Limit Levels for Water Quality Monitoring

Parameter	Performance criteria	Monitoring Location				
		WM1	**WM2A**	**WM2B**	**WM3**	**WM4**
DO (mg/L)	Action Level	(*)4.23	(**)4.00	(*)4.74	(**)4.00	(*)4.14
	Limit Level	(#)4.19	(**)4.00	(#)4.60	(**)4.00	(#)4.08
Turbidity (NTU)	Action Level	51.3	24.9	11.4	13.4	35.2
		AND	120% of upstream control station of the same day			
	Limit Level	67.6	33.8	12.3	14.0	38.4
		AND	130% of upstream control station of the same day			
SS (mg/L)	Action Level	54.5	14.6	11.8	12.6	39.4
		AND	120% of upstream control station of the same day			
	Limit Level	64.9	17.3	12.4	12.9	45.5
		AND	130% of upstream control station of the same day			

Remarks:
*The Proposed **Action Level** of Dissolved Oxygen is adopted to be used 5%-ile of baseline data*
*The Proposed **Action & Limit Level** of Dissolved Oxygen is used 4mg/L*
*The Proposed **Limit Level** of Dissolved Oxygen is adopted to be used 1%-ile of baseline data*
Notes:
All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

4.5 DISCUSSION AND RECOMMENDATIONS

Air Quality

Possible Influence of Seasonal Changes

4.5.1 The baseline monitoring was conducted from **13 June 2013** to **12 July 2013** during typical Hong Kong wet seasons. The baseline data so collected therefore represent the baseline air quality of the wet season immediately prior to commencement of the Project. They may not reflect the air quality conditions of dry seasons in Hong Kong, which are normally significantly different.

4.5.2 It is therefore recommended that the interpretation of the air quality monitoring data should take into account the influence of the seasonal changes, and the baseline conditions should be regularly reviewed, in particular during seasonal changes.

Water Quality

Environmental Performance Criteria of DO, SS, and turbidity

4.5.3 The baseline suspended solids (SS) and turbidity levels reflect typical water quality at the monitoring locations during wet seasons (April to October). The established environmental performance criteria, i.e. Action & Limit Levels, are therefore applicable to the Event and Action Plan in Hong Kong during rainy 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.

5 CONCLUSIONS AND RECOMMENTATIONS

5.1 CONCLUSIONS

5.1.1 The baseline monitoring program was carried out during the period between **13 June 2013** and **12 July 2013** at the designated monitoring locations by the ET according to the approved EM&A Manual. During the baseline monitoring, there were no construction activities undertaken under this Project.

5.1.2 Based on the baseline monitoring results, the recommended environmental performance criteria for air quality, construction noise and water quality are summarized as follows:

Recommended Action & Limit Levels of Air Quality				
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	265	143	500	260
AM2	268	149	500	260
AM3	269	145	500	260
AM4a	267	148	500	260
AM5	268	143	500	260
AM6	269	148	500	260
AM7a	275	156	500	260
AM8	269	144	500	260
AM9a	271	151	500	260

Recommended Action & Limit Levels of Construction Noise		
Monitoring Location	**Action Level**	**Limit Level**
	0700-1900 hours on normal weekdays	
NM1, NM2, NM3, NM4, NM5, NM6, NM7, NM8, NM9, NM10	When one or more documented complaints are received	75 dB(A) of Leq(30min) during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 70 dB(A) of Leq(30min) for schools and 65 dB(A) during school examination periods

Recommended Action & Limit Levels of Water Quality						
Parameter	**Performance criteria**	**Monitoring Location**				
		WM1	**WM2A**	**WM2B**	**WM3**	**WM4**
DO (mg/L)	Action Level	(*)4.23	(**)4.00	(*)4.74	(**)4.00	(*)4.14
	Limit Level	(#)4.19	(**)4.00	(#)4.60	(**)4.00	(#)4.08
Turbidity (NTU)	Action Level	51.3	24.9	11.4	13.4	35.2
		AND 120% of upstream control station of the same day				
	Limit Level	67.6	33.8	12.3	14.0	38.4
		AND 130% of upstream control station of the same day				
SS (mg/L)	Action Level	54.5	14.6	11.8	12.6	39.4
		AND 120% of upstream control station of the same day				
	Limit Level	64.9	17.3	12.4	12.9	45.5
		AND 130% of upstream control station of the same day				

Remarks:
*The Proposed **Action Level** of Dissolved Oxygen is adopted to be used 5%-ile of baseline data*
*The Proposed **Action & Limit Level** of Dissolved Oxygen is used 4mg/L*
*The Proposed **Limit Level** of Dissolved Oxygen is adopted to be used 1%-ile of baseline data*
Notes:
All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

5.2 RECOMMENDATIONS

5.2.1 The baseline monitoring of air quality, noise and water quality was conducted during typical wet season (April to October) in Hong Kong. It is important to note that influence of seasonal changes should be taken into account when interpreting monitoring data obtained during dry 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.

5.2.2 Due to the Project Liantang/Heung Yuen Wai Boundary Control Point and Associated Works will be divided several contracts and separated different time commencement. Therefore, the all designated stations i.e. air quality, construction noise and water quality performed impact monitoring will depend on the construction to be undertaken working areas.

Appendix A

Layout plan of the Project

839800 N
842800 N
845800 N
836600 E
SHEUNG SHUI
FANLING
FANLING HIGHWAY
HONG KONG - SHENZHEN
MAN KAM TO ROAD
BOUNDARY OF HKSAR
BOUNDARY OF FRONTIER CLOSED AREA
SHENZHEN SHI
FANLING HIGHWAY INTERCHANGE
LIN MA HANG ROAD MODIFICATION
LIN MA HANG ROAD INTERCHANGE
EXTENT OF WORKS IN CONTRACT 5
BCP SITE FORMATION
PING CHE ROAD
LUNG SHAN TUNNEL
EXTENT OF WORKS IN CONTRACT 3
LAU SHUI HEUNG
SHA TAU KOK ROAD
PING YEUNG INTERCHANGE
CHEUNG SHAN TUNNEL
EXTENT OF WORKS IN CONTRACT 6
NENT LANDFILL
HEUNG YUEN WAI
SHA TAU KOK ROAD INTERCHANGE
EXTENT OF WORKS IN CONTRACT 2
PAT SIN LENG COUNTRY PARK
REPROVISION OF WO KENG SHAN GARDEN AND PUBLIC TOILET

SHENZHEN SHI
NORTH DISTRICT
北
TAI PO DISTRICT
YUEN LONG DISTRICT
SHATIN DISTRICT
TSUEN WAN DISTRICT

LOCATION PLAN
SCALE 1 : 30000

LEGEND:
- SITE BOUNDARY
- UNDERGROUND WORKS SITE BOUNDARY

REV. 修訂	DESCRIPTION 內容摘要	BY 由	CHECKED 審核	DATE 日期

CEDD 土木工程拓展署 Civil Engineering and Development Department

LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

PROJECT LAYOUT PLAN

AECOM

DRG.NO. 圖紙編號 60212563/PLP/001

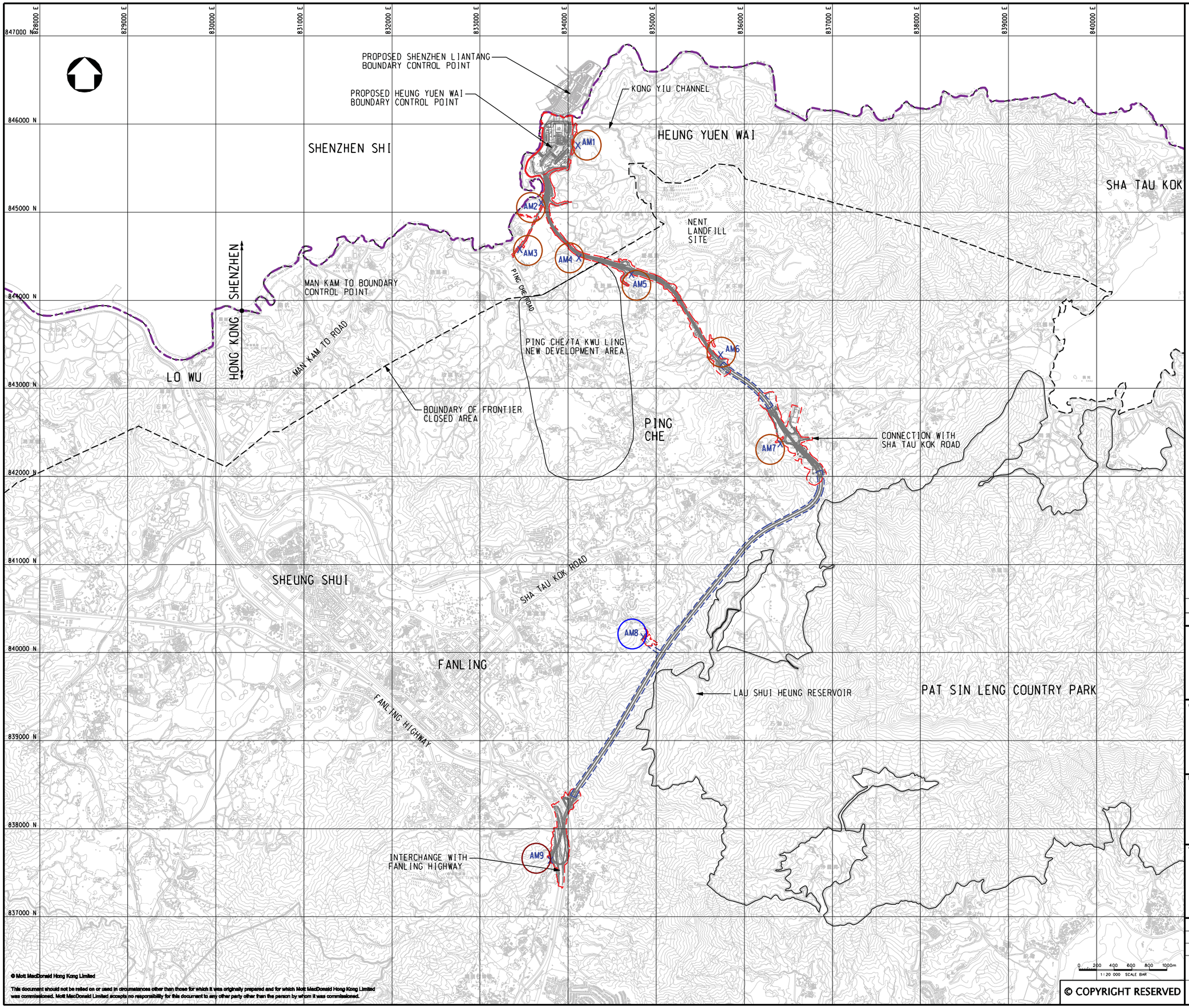
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 負責人
-	-	-
DRAWN BY 繪圖 ZJ	STATUS 階段	
SCALE 比例 A1 1 : 15000		
DIMENSIONS ARE IN 尺寸單位 METRES	© COPYRIGHT RESERVED 版權所有	

A

Plot File by : 2013-1-24 ZHOUJ2
P:\Projects\60212563\DRAWING\REPORT\PLP\PLP_001.dgn

Appendix B

Designated Monitoring Locations as Recommended in the Approved EM&A Manual



LEGEND:

- BOUNDARY OF HKSAR
- WORKS AREA (ABOVE GROUND)
- WORKS AREA (TUNNEL)
- X AIR MONITORING STATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

Mott MacDonald
20/F Two Landmark East
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Client

CEDD
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF CONSTRUCTION AIR QUALITY MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
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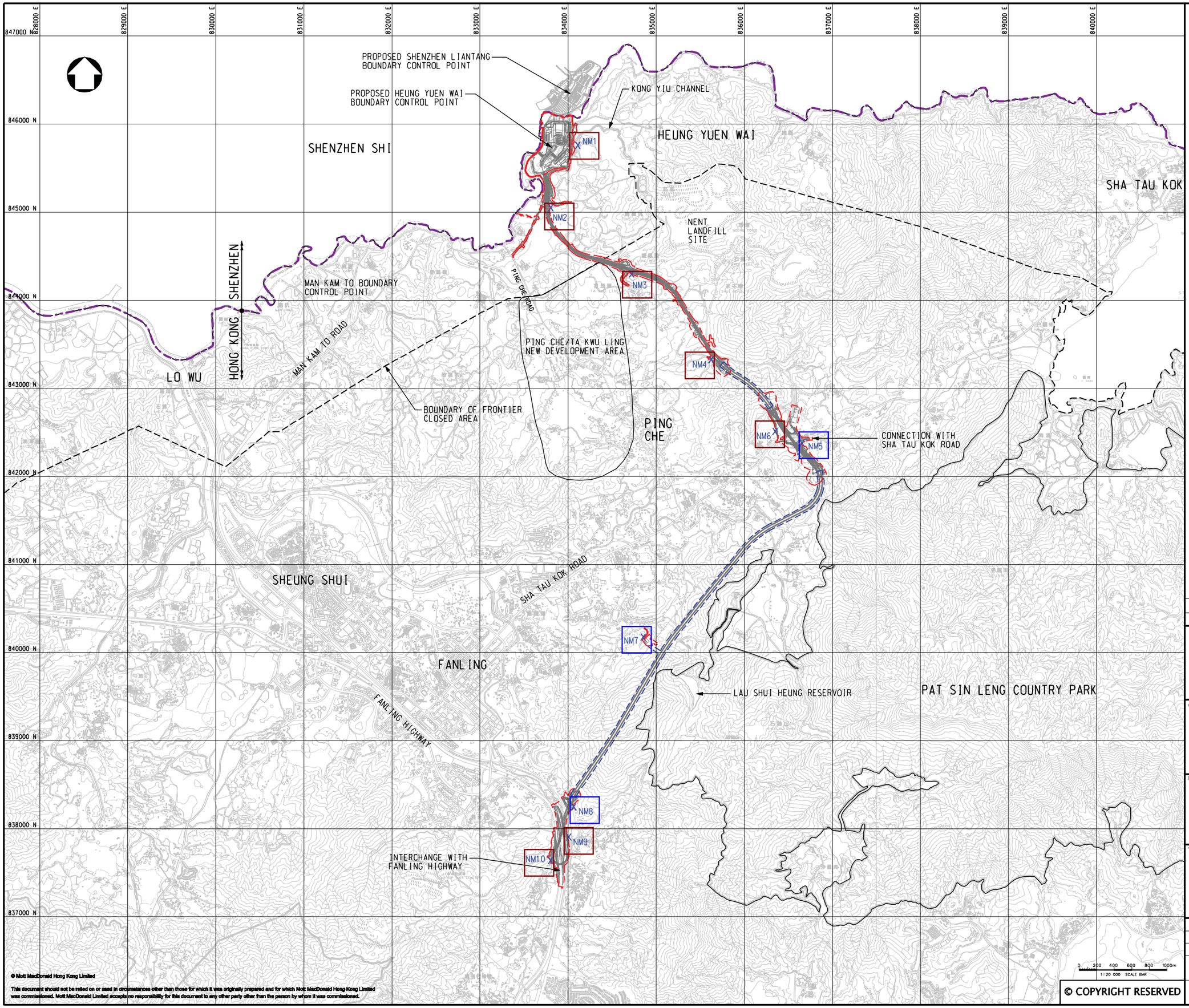
		CAD file	j:\255228\report\env\em&a\I0083\FIG 2-1.dgn		
Drawing No	FIGURE 2.1				Rev P1



LEGEND:

- BOUNDARY OF HKSAR
- WORKS AREA (ABOVE GROUND)
- WORKS AREA (TUNNEL)
- X CONSTRUCTION NOISE MONITORING STATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

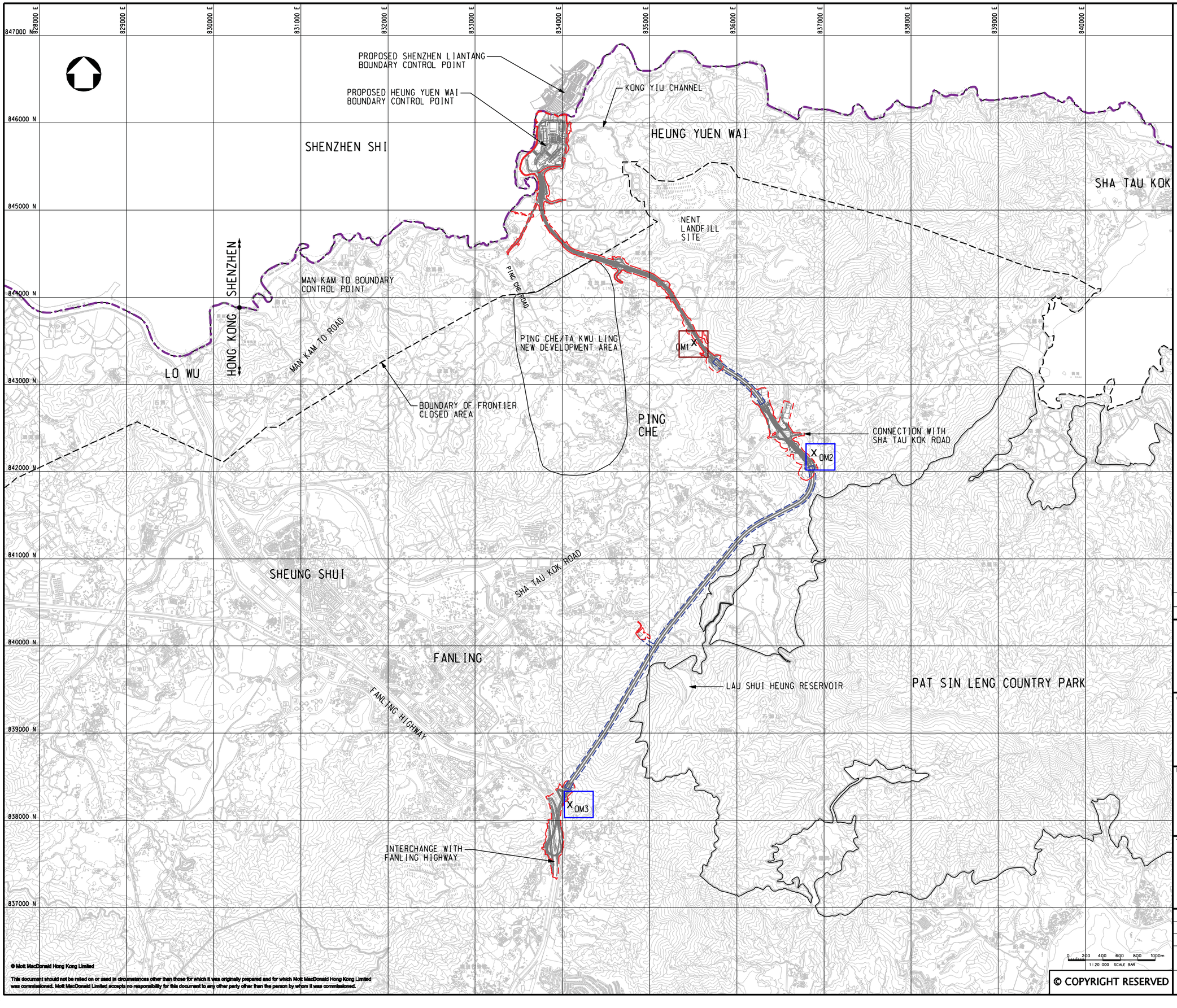
Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF CONSTRUCTION NOISE MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
Scale at A1	1:20000	Project	255228		Status PRE
		CAD file	j:\255228\report\env\em&a\00831\FIG 3-1.dgn		
Drawing No	FIGURE 3.1				Rev P1



LEGEND:

- BOUNDARY OF HKSAR
- WORKS AREA (ABOVE GROUND)
- WORKS AREA (TUNNEL)
- X OPERATIONAL NOISE MONITORING STATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

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Client

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

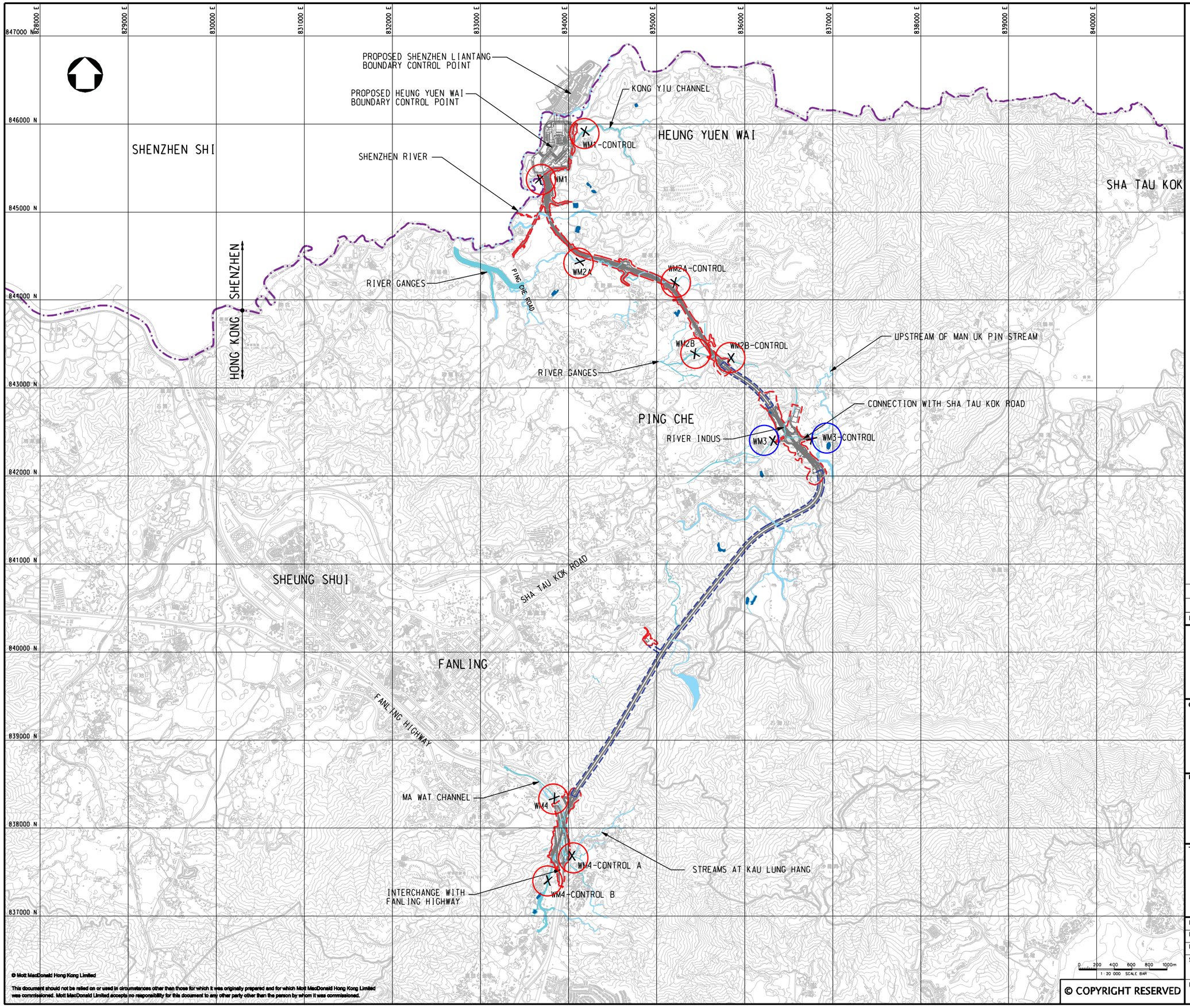
Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF OPERATIONAL NOISE MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
Scale at A1	1:20000	Project	255228		Status PRE
		CAD file	j:\255228\report\env\em&a\00831\FIG 3-2.dgn		
Drawing No	FIGURE 3.2				Rev P1



LEGEND:

- BOUNDARY OF HKSAR
- LAND REQUIREMENT LIMIT (ABOVE GROUND)
- LAND REQUIREMENT LIMIT (TUNNEL)
- X PROPOSED WATER QUALITY MONITORING STATION

MONITORING STATION	CO-ORDINATES	
	EASTING(m)	NORTHING(m)
WM1	833668.635	845371.097
WM1-CONTROL	834185.480	845916.662
WM2A	834132.193	844432.910
WM2A-CONTROL	835205.329	844200.151
WM2B	835434.744	843394.606
WM2B-CONTROL	835845.878	843343.625
WM3	836323.622	842404.977
WM3-CONTROL	836763.419	842425.507
WM4	833840.783	838344.842
WM4-CONTROL A	834038.937	837688.995
WM4-CONTROL B	833769.123	837406.936

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	NOV 10	MING	GENERAL REVISION	HC	HT
P1	OCT 10	MING	FIRST ISSUE	HC	HT

Mott MacDonald
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F +852 2827 1823
W www.mottmac.com.hk

Client

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

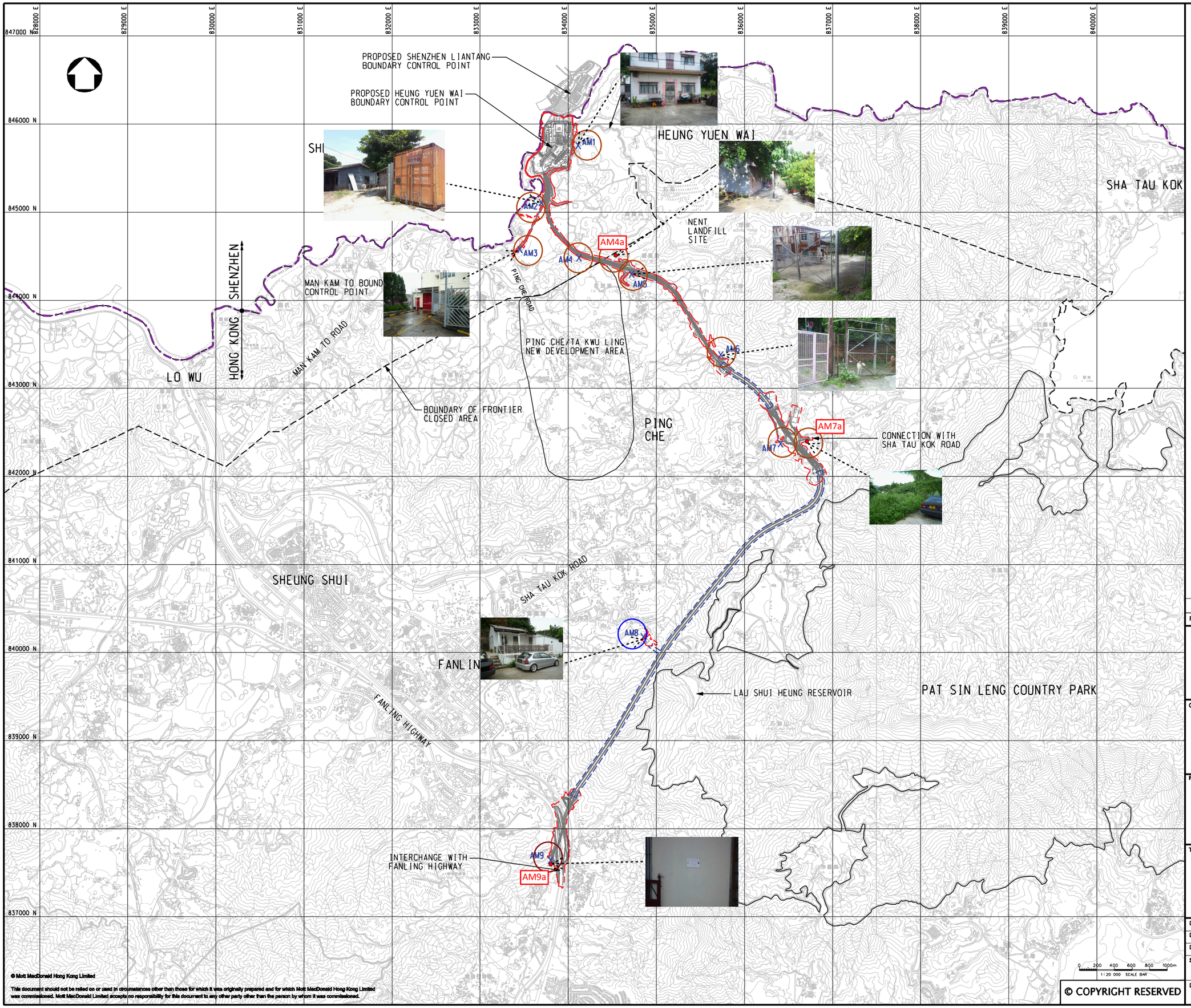
Title

LOCATIONS OF PROPOSED WATER QUALITY MONITORING STATIONS

Designed	HC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	HC		Approved	HT	
Scale at A1	1:20000	Project	255228	Status	PRE
		CAD file	X:\255228\REPORT\ENV\EM&A\DIR5\FIG 4-Ldgn		
Drawing No	FIGURE 4.1			Rev	P2

Appendix C

Sensitive Receivers Location for Baseline Monitoring



Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

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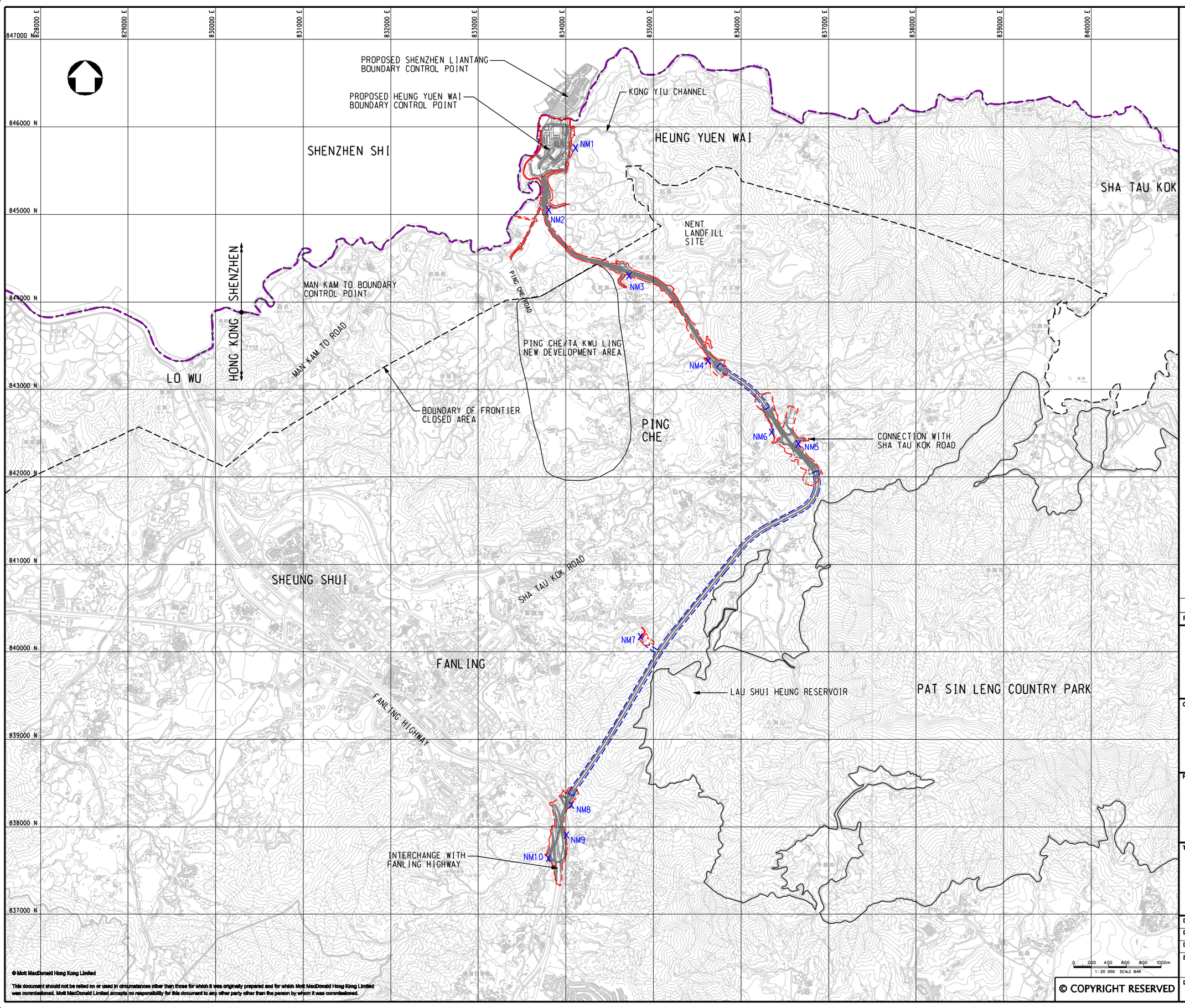
Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF CONSTRUCTION AIR QUALITY MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
Scale at A1	1:20000	Project	255228		Status PRE
		CAD file	j:\255228\report\env\em&a\00083\FIG 2-1.dgn		
Drawing No	FIGURE 2.1				Rev P1



LEGEND:

- BOUNDARY OF HKSAR
- WORKS AREA (ABOVE GROUND)
- WORKS AREA (TUNNEL)
- X CONSTRUCTION NOISE MONITORING STATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

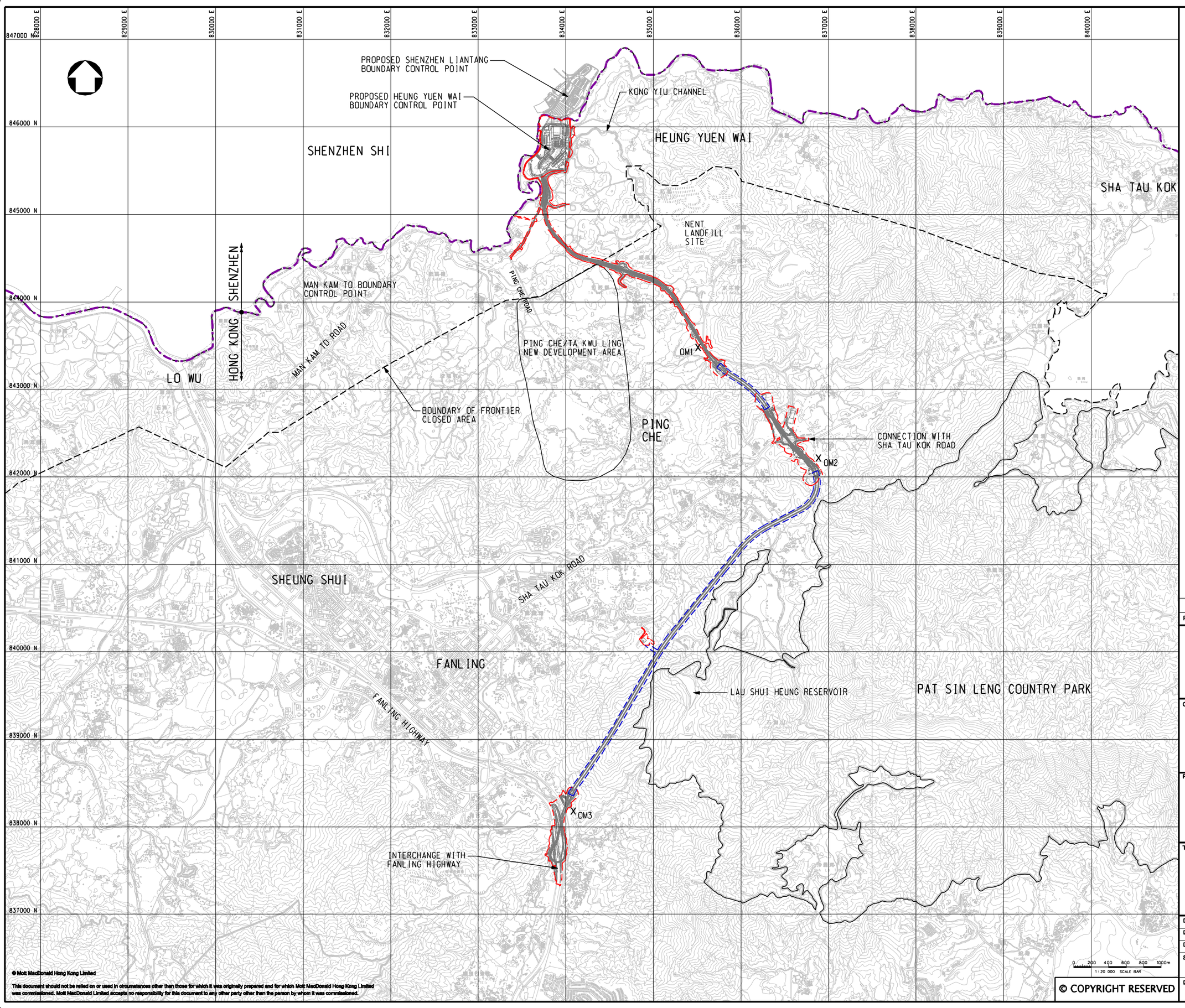
Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF CONSTRUCTION NOISE MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
Scale at A1	1:20000	Project	255228	Status	PRE
		CAD file	j:\255228\report\env\em&a\I0083\FIG 3-1.dgn		
Drawing No	FIGURE 3.1			Rev	P1



LEGEND:

- BOUNDARY OF HKSAR
- WORKS AREA (ABOVE GROUND)
- WORKS AREA (TUNNEL)
- X OPERATIONAL NOISE MONITORING STATIONS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	AUG 10	MING	FIRST ISSUE	DC	HT

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

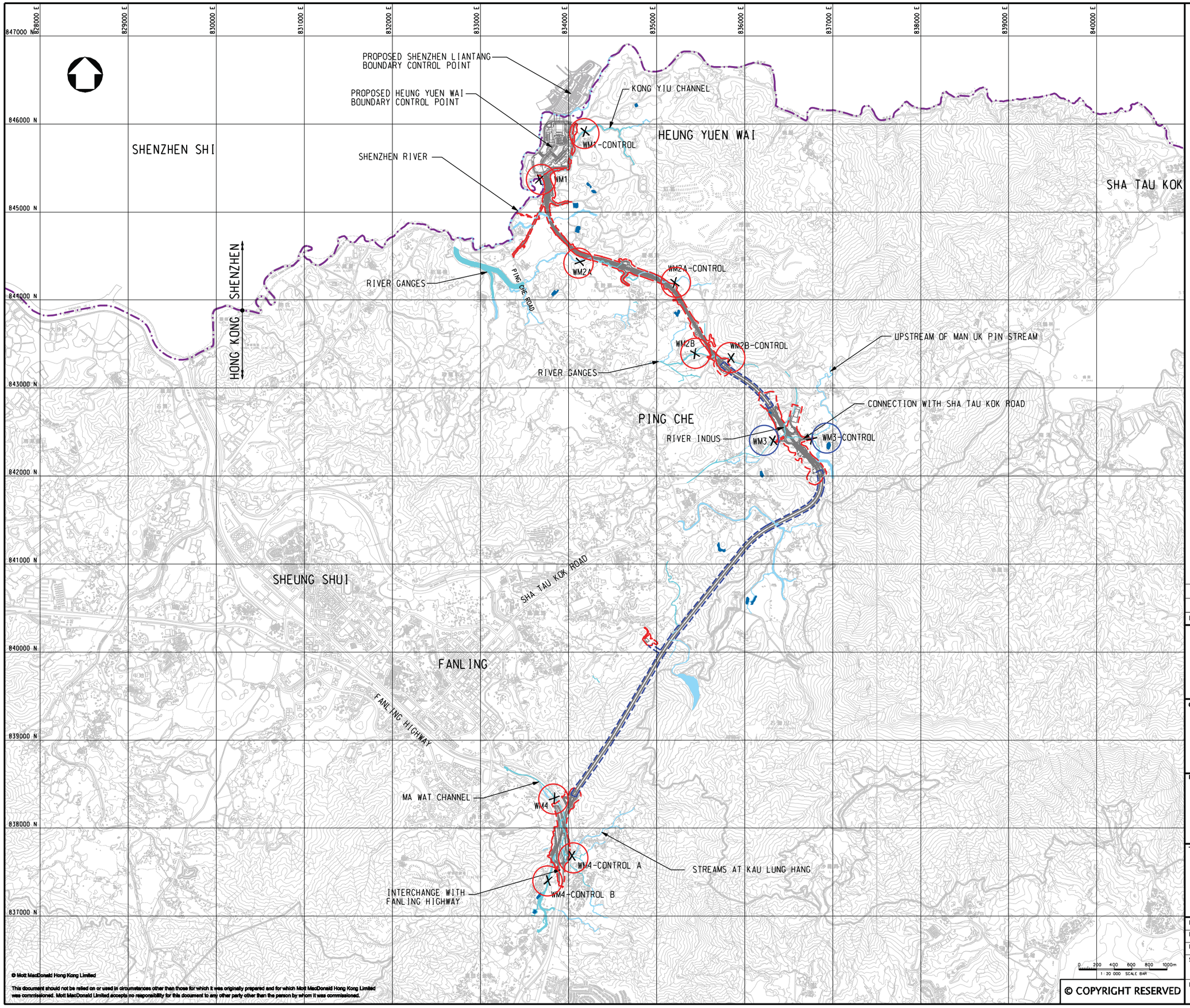
Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

Title

PROPOSED LOCATION OF OPERATIONAL NOISE MONITORING STATIONS

Designed	DC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	DC		Approved	HT	
Scale at A1	1:20000	Project	255228	Status	PRE
		CAD file	j:\255228\report\env\em&a\10083\FIG 3-2.dgn		
Drawing No	FIGURE 3.2			Rev	P1



LEGEND:

- BOUNDARY OF HKSAR
- LAND REQUIREMENT LIMIT (ABOVE GROUND)
- LAND REQUIREMENT LIMIT (TUNNEL)
- X PROPOSED WATER QUALITY MONITORING STATION

MONITORING STATION	CO-ORDINATES	
	EASTING(m)	NORTHING(m)
WM1	833668.635	845371.097
WM1-CONTROL	834185.480	845916.662
WM2A	834132.193	844432.910
WM2A-CONTROL	835205.329	844200.151
WM2B	835434.744	843394.606
WM2B-CONTROL	835845.878	843343.625
WM3	836323.622	842404.977
WM3-CONTROL	836763.419	842425.507
WM4	833840.783	838344.842
WM4-CONTROL A	834038.937	837688.995
WM4-CONTROL B	833769.123	837406.936

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	NOV 10	MING	GENERAL REVISION	HC	HT
P1	OCT 10	MING	FIRST ISSUE	HC	HT

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CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Project

AGREEMENT NO. CE45/2008(CE)
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS

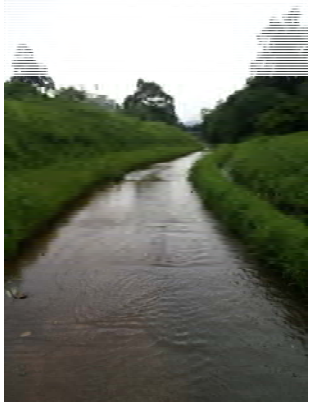
Title

LOCATIONS OF PROPOSED WATER QUALITY MONITORING STATIONS

Designed	HC		Eng.Chk.	EC	
Drawn	MING		Coordination	EC	
Dwg.Chk.	HC		Approved	HT	
Scale at A1	1:20000	Project	255228	Status	PRE
		CAD file	X:\255228\REPORT\ENV\EM&A\DIR5\FIG 4-Ldgn		
Drawing No	FIGURE 4.1			Rev	P2

Photographic Records for Water Quality Monitoring Location

	
Alternative Location of WM1	**Co-ordinates of Alternative Location of WM1**
	
Alternative Location of WM1 - Control	**Co-ordinates of Alternative Location of WM1 - Control**
	
Alternative Location of WM2A	**Co-ordinates of Alternative Location of WM2A**
	
Alternative Location of WM2-Control A	**Co-ordinates of Alternative Location of WM2 – Control**

	
Location of WM2B-Control	**Co-ordinates of WM2B-Control**
	
Location of WM2B	**Co-ordinates of WM2B**
	
Location of WM3-Control	**Co-ordinates of WM3-Control**
	
Location of WM3	**Co-ordinates of WM3**

	
Location of WM4–Control A	**Co-ordinates of WM4-Control A**
	
Location of WM4–Control B	**Co-ordinates of WM4-Control B**
	
Location of WM4	**Co-ordinates of WM4**

Appendix D

Valid Calibration Certificate of Monitoring Equipment

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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 17, 2012 Rootsmeter S/N 0438320 Ta (K) - 294
Operator Tisch Orifice I.D. - 1483 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4140	3.2	2.00
2	NA	NA	1.00	0.9960	6.4	4.00
3	NA	NA	1.00	0.8910	7.9	5.00
4	NA	NA	1.00	0.8510	8.7	5.50
5	NA	NA	1.00	0.7020	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0018	0.7085	1.4185		0.9957	0.7042	0.8829
0.9976	1.0016	2.0061		0.9915	0.9955	1.2486
0.9955	1.1173	2.2429		0.9894	1.1105	1.3959
0.9945	1.1686	2.3524		0.9884	1.1615	1.4641
0.9890	1.4088	2.8371		0.9830	1.4003	1.7657
Qstd slope (m) =		2.02742		Qa slope (m) =		1.26953
intercept (b) =		-0.02027		intercept (b) =		-0.01262
coefficient (r) =		0.99996		coefficient (r) =		0.99996
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Nov-12
Location ID :	Calibration Room HVS 021	Next Calibration Date:	28-Jan-13

CONDITIONS

Sea Level Pressure (hPa)	1010.3	Corrected Pressure (mm Hg)	757.725
Temperature (°C)	26.0	Temperature (K)	299

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Calibration Date->	17-May-12	Expiry Date->	17-May-13

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.2	5.2	10.4	1.531	53	52.74	Slope = 19.6938
13	4.3	4.3	8.6	1.393	51	50.75	Intercept = 23.1589
10	3.3	3.3	6.6	1.222	48	47.77	Corr. coeff. = 0.9964
8	2.1	2.1	4.2	0.977	43	42.79	
5	1.3	1.3	2.6	0.771	38	37.82	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K

Pstd = actual pressure during calibration (mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

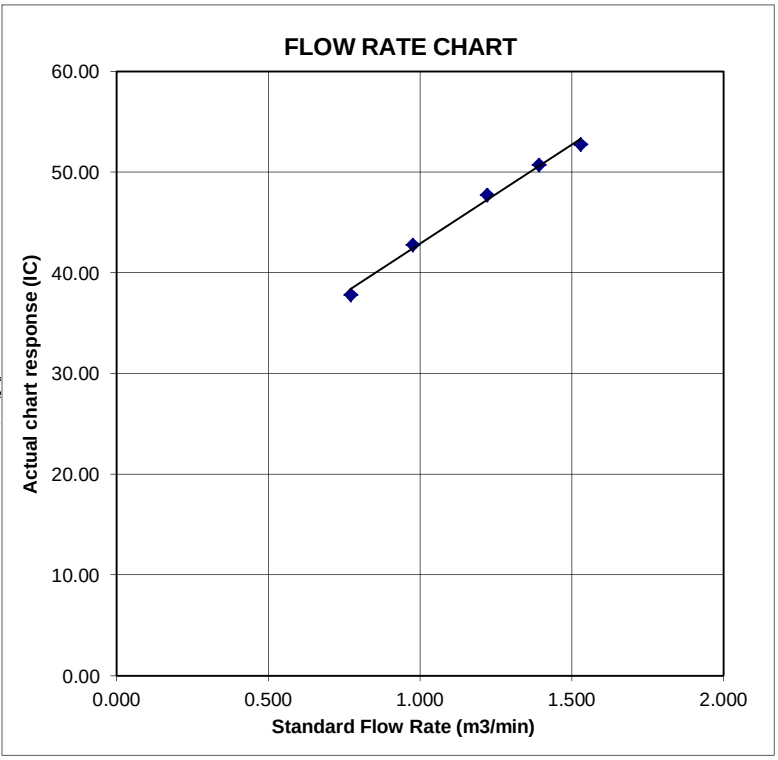
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
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513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Apr 09, 2013 Rootsmeter S/N 0438320 Ta (K) - 296
Operator Tisch Orifice I.D. - 1941 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4710	3.3	2.00
2	NA	NA	1.00	1.0370	6.4	4.00
3	NA	NA	1.00	0.9270	7.9	5.00
4	NA	NA	1.00	0.8840	8.8	5.50
5	NA	NA	1.00	0.7300	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9916	0.6741	1.4113		0.9956	0.6768	0.8874
0.9874	0.9521	1.9959		0.9914	0.9560	1.2549
0.9854	1.0630	2.2315		0.9894	1.0673	1.4030
0.9843	1.1134	2.3405		0.9883	1.1180	1.4715
0.9790	1.3410	2.8227		0.9829	1.3465	1.7747
Qstd slope (m) =		2.11662		Qa slope (m) =		1.32539
intercept (b) =		-0.01714		intercept (b) =		-0.01078
coefficient (r) =		0.99999		coefficient (r) =		0.99999
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Tsung Yuen Ha Village House No. 63
Location ID : AM1

Date of Calibration: 2013/6/29
Next Calibration Date: 2013/8/29
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1007.5	Corrected Pressure (mm Hg)	755.625
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.1	5.1	10.2	1.501	50	49.07	Slope = 30.2310
13	4.6	4.6	9.2	1.426	48	47.10	Intercept = 3.4685
10	3.3	3.3	6.6	1.209	40	39.25	Corr. coeff. = 0.9935
7	2.1	2.1	4.2	0.966	32	31.40	
5	1.5	1.5	3.0	0.818	30	29.44	

Calculations :

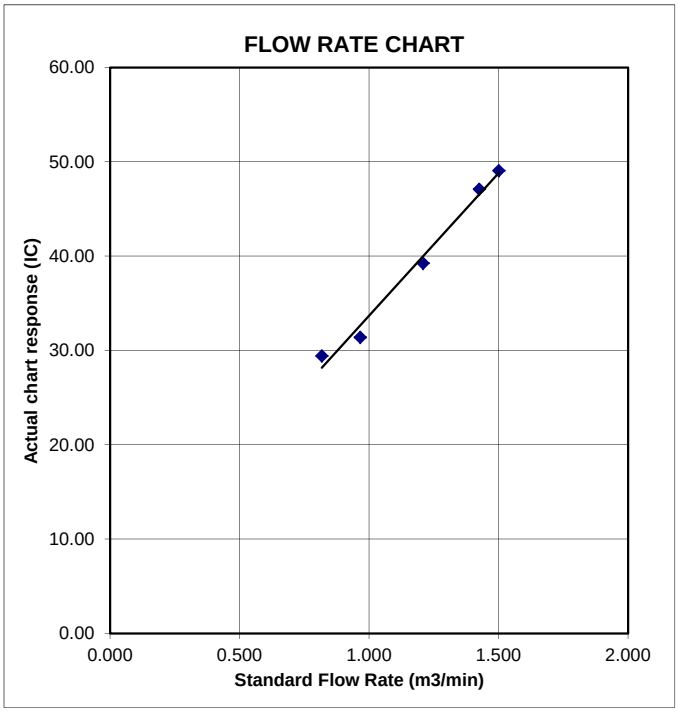
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Wo Keng Shan Village House
Location ID : AM6

Date of Calibration: 2013/6/6
Next Calibration Date: 2013/8/6
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1010	Corrected Pressure (mm Hg)	757.5
Temperature (°C)	27.1	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	4.4	4.4	8.8	1.402	62	61.46	Slope = 27.5408
13	3.5	3.5	7.0	1.252	58	57.50	Intercept = 22.6959
10	3	3	6.0	1.159	54	53.53	Corr. coeff. = 0.9942
7	1.8	1.8	3.6	0.900	49	48.58	
5	1.1	1.1	2.2	0.705	42	41.64	

Calculations :

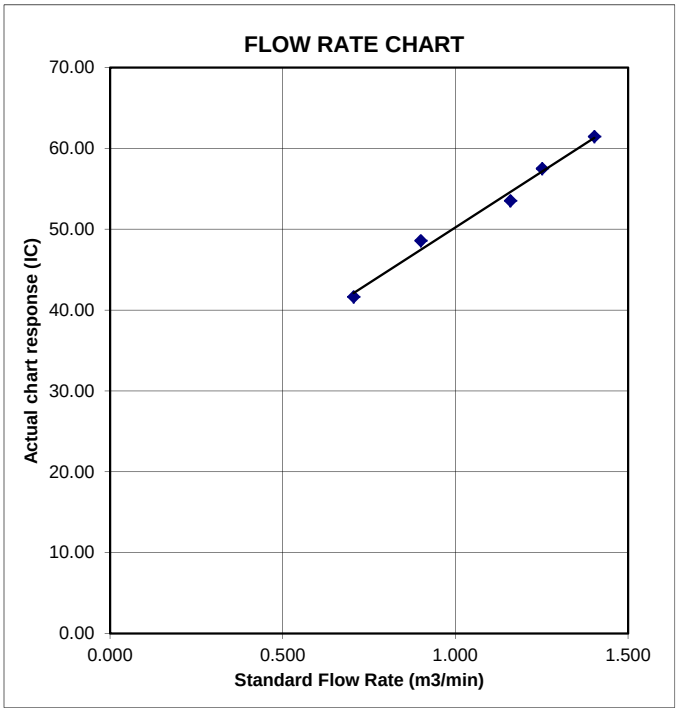
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Village House near Lin Ma Hang Road
Location ID : AM2

Date of Calibration: 2013/6/27
Next Calibration Date: 2013/8/27
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1006.3	Corrected Pressure (mm Hg)	754.725
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	4.8	4.8	9.6	1.455	56	54.92	Slope = 41.6687
13	4.3	4.3	8.6	1.378	50	49.04	Intercept = -7.3538
10	3.6	3.6	7.2	1.261	45	44.13	Corr. coeff. = 0.9934
7	2.6	2.6	5.2	1.073	38	37.27	
5	1.7	1.7	3.4	0.869	30	29.42	

Calculations :

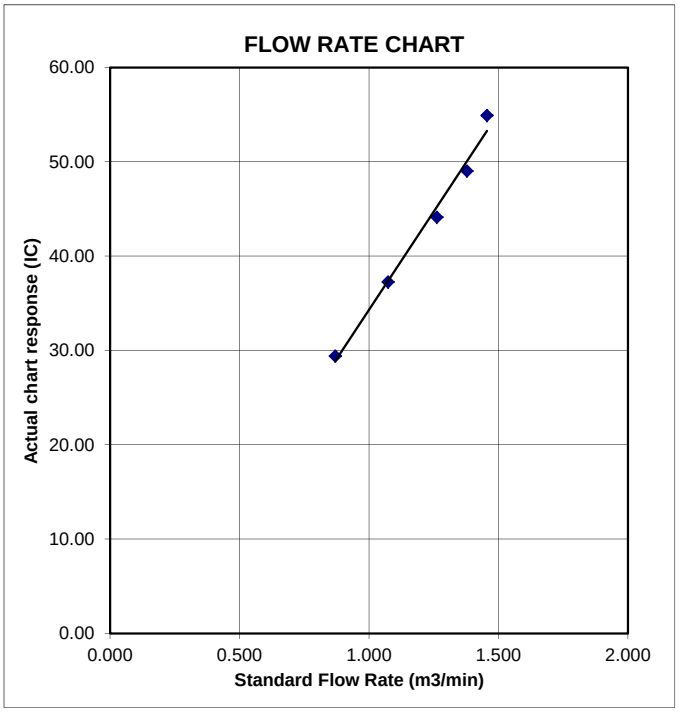
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : A village (nameless) aligns to Sha Tau Kok Road – Wo Hang Section
Location ID : AM7a

Date of Calibration: 2013/6/6
Next Calibration Date: 2013/8/6
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1010	Corrected Pressure (mm Hg)	757.5
Temperature (°C)	27.1	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected
18	4	4	8.0	1.338	50	49.57
13	3.5	3.5	7.0	1.252	47	46.59
10	2.6	2.6	5.2	1.080	41	40.65
7	1.8	1.8	3.6	0.900	34	33.71
5	1.1	1.1	2.2	0.705	28	27.76

LINEAR REGRESSION

Slope = 34.9298
Intercept = 2.8092
Corr. coeff. = 0.9994

Calculations :

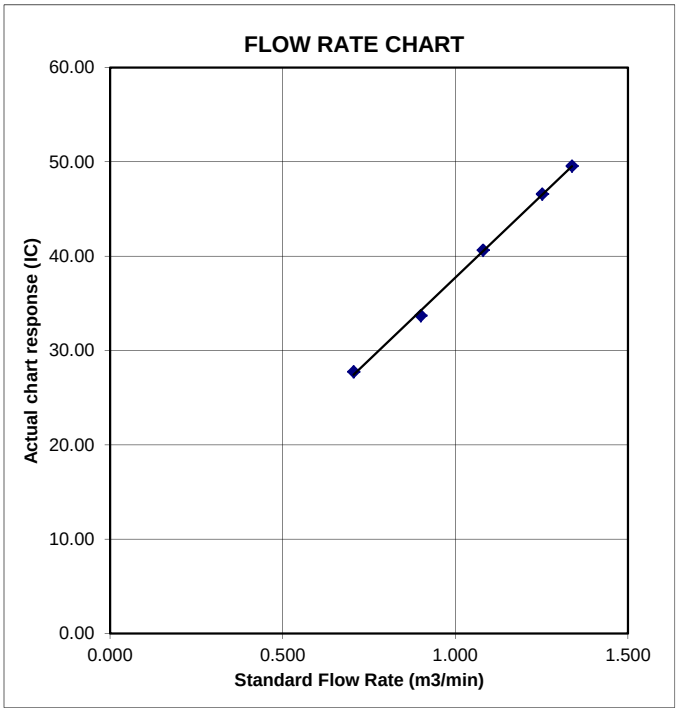
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ta Kwu Ling Fire Service Station
Location ID : AM3

Date of Calibration: 2013/6/27
Next Calibration Date: 2013/8/27
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1006.3	Corrected Pressure (mm Hg)	754.725
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected
18	6.3	6.3	12.6	1.666	56	54.92
13	4.9	4.9	9.8	1.470	50	49.04
10	3.9	3.9	7.8	1.313	46	45.11
7	2.7	2.7	5.4	1.093	38	37.27
5	1.5	1.5	3.0	0.817	28	27.46

LINEAR REGRESSION

Slope = 32.3478
Intercept = 1.6179
Corr. coeff. = 0.9980

Calculations :

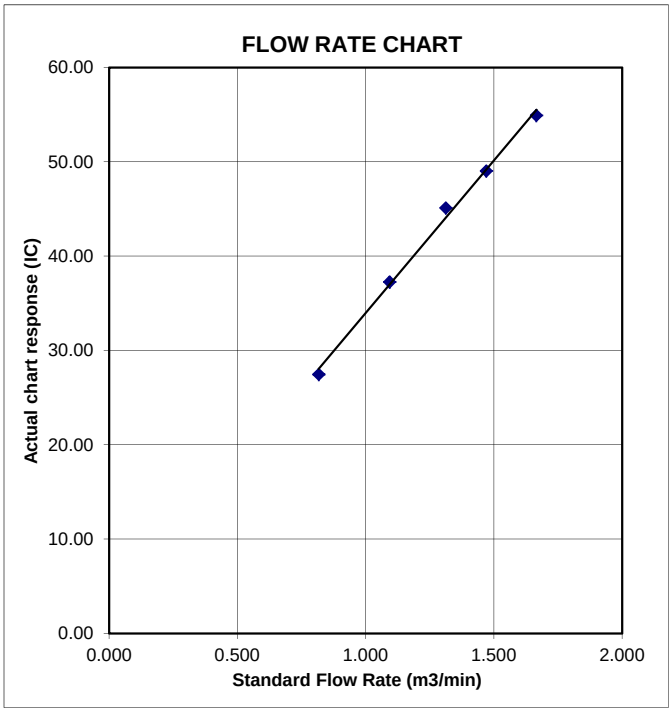
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Po Kat Tsai Village No. 4
Location ID : AM8

Date of Calibration: 2013/6/27
Next Calibration Date: 2013/8/27
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1006.3	Corrected Pressure (mm Hg)	754.725
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.4	6.4	12.8	1.679	64	62.77	Slope = 27.7567
13	5	5	10.0	1.485	59	57.86	Intercept = 16.3559
10	3.9	3.9	7.8	1.313	54	52.96	Corr. coeff. = 0.9995
7	2.5	2.5	5.0	1.052	46	45.11	
5	1.5	1.5	3.0	0.817	40	39.23	

Calculations :

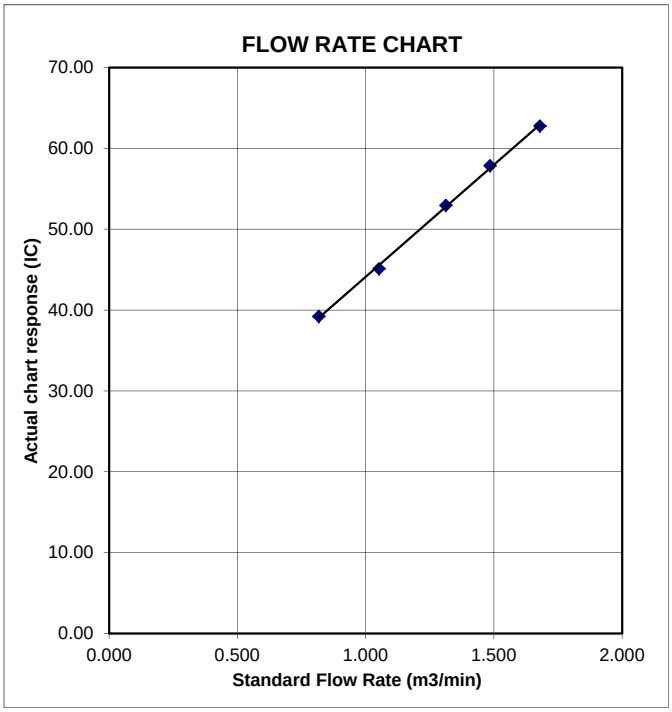
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : A village house located at about 160m east side of the original point AM4 Date of Calibration: 2013/6/6
Location ID : AM4a Next Calibration Date: 2013/8/6
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1010	Corrected Pressure (mm Hg)	757.5
Temperature (°C)	27.1	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6.3	12.6	1.677	46	45.60	Slope = 33.5987
13	5	5	10.0	1.494	39	38.66	Intercept = -11.2807
10	3.9	3.9	7.8	1.321	33	32.72	Corr. coeff. = 0.9988
7	2.5	2.5	5.0	1.059	24	23.79	
5	1.6	1.6	3.2	0.849	18	17.84	

Calculations :

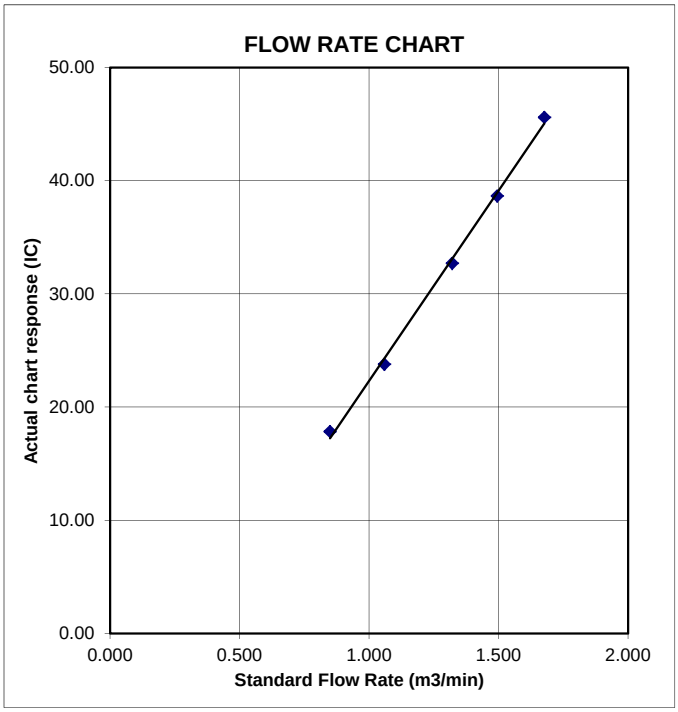
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Nam Wa Po Village House No. 71
Location ID : AM9a

Date of Calibration: 2013/6/6
Next Calibration Date: 2013/8/6
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1010	Corrected Pressure (mm Hg)	757.5
Temperature (°C)	27.1	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected
18	5.9	5.9	11.8	1.623	61	60.47
13	4.8	4.8	9.6	1.464	56	55.52
10	3.8	3.8	7.6	1.304	52	51.55
7	2.4	2.4	4.8	1.038	43	42.63
5	1.5	1.5	3.0	0.822	36	35.69

LINEAR REGRESSION

Slope = 30.9213
Intercept = 10.5141
Corr. coeff. = 0.9991

Calculations :

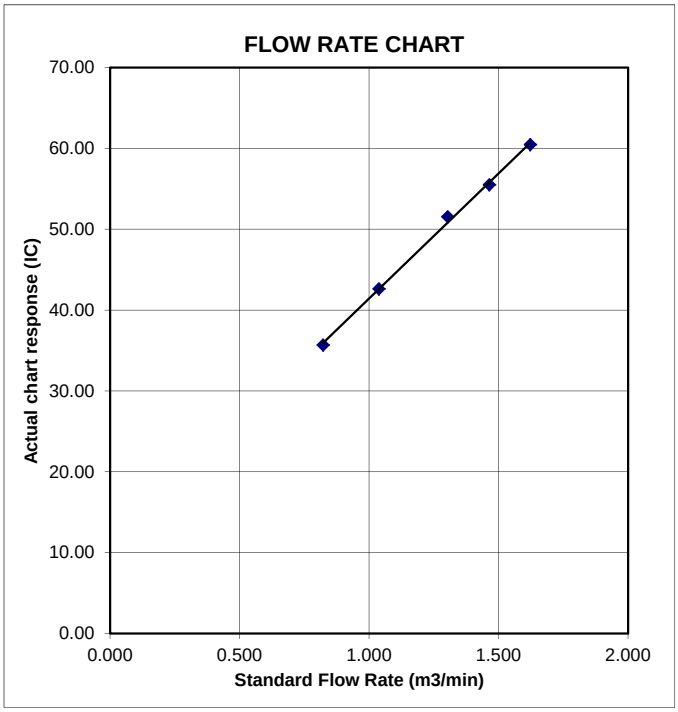
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ping Yeung Village House
Location ID : AM5

Date of Calibration: 2013/6/6
Next Calibration Date: 2013/8/6
Technician: Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1010	Corrected Pressure (mm Hg)	757.5
Temperature (°C)	27.1	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11662
Model->	5025A	Qstd Intercept ->	-0.01714
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.6	6.6	13.2	1.716	57	56.51	Slope = 32.9175
13	5.4	5.4	10.8	1.553	50	49.57	Intercept = -0.7798
10	4.2	4.2	8.4	1.370	44	43.62	Corr. coeff. = 0.9974
7	2.6	2.6	5.2	1.080	36	35.69	
5	1.7	1.7	3.4	0.875	28	27.76	

Calculations :

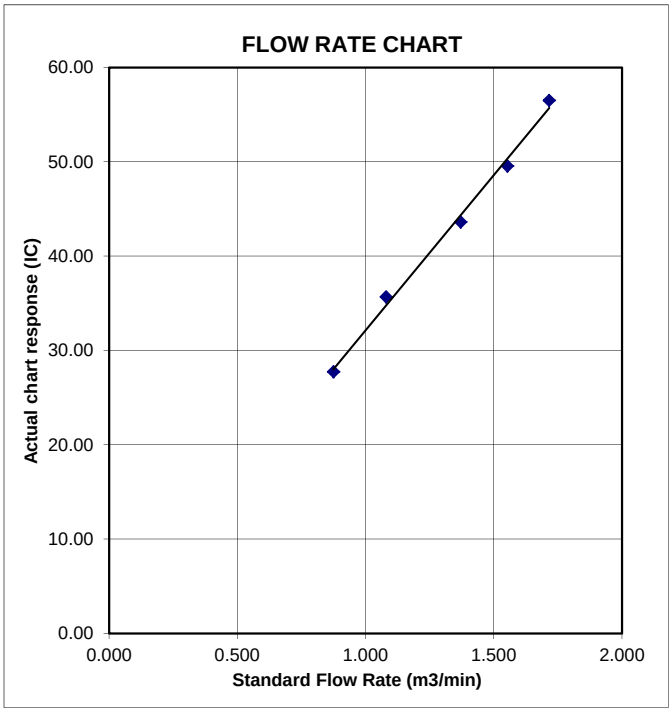
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

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



Equipment Calibration Record

AUES

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3
Serial No.	362337
Equipment Ref:	EQ093
Sensitivity	747 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 021
Last Calibration Date:	22 November 2012

Equipment Calibration Results:

Calibration Date: 22 November 2012

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
15	17:00 ~ 08:00	25.1	1011.1	0.0186	13758	15.3
3	08:00 ~ 11:00	22.4	1013.5	0.0167	2133	13.1
5	11:00 ~ 16:00	22.4	1013.5	0.0259	6152	21.0

Sensitivity Adjustment Scale Setting (Before Calibration) 752 (CPM)

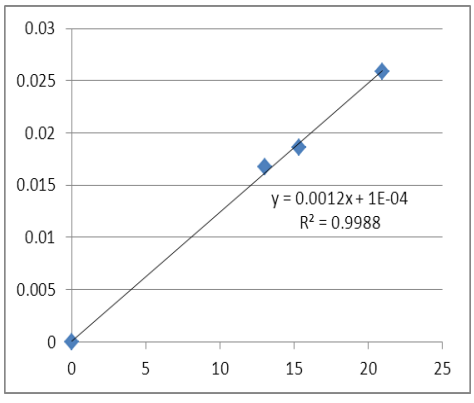
Sensitivity Adjustment Scale Setting (After Calibration) 748 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0012

Correlation Coefficient 0.9988

Validity of Calibration Record 5 December 2012



Operator : Tony Wong Signature : Date : 5 December 2012

QC Reviewer : Ben Tam Signature : Date : 5 December 2012

Equipment Calibration Record

AUES

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	2X6145
Equipment Ref:	EQ105
Sensitivity	594 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 021
Last Calibration Date:	22 November 2012

Equipment Calibration Results:

Calibration Date: 22 November 2012

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
15	17:00 ~ 08:00	25.1	1011.1	0.0186	12604	14.1
3	08:00 ~ 11:00	22.4	1013.5	0.0167	2060	12.6
5	11:00 ~ 16:00	22.4	1013.5	0.0259	5765	19.6

Sensitivity Adjustment Scale Setting (Before Calibration) 596 (CPM)

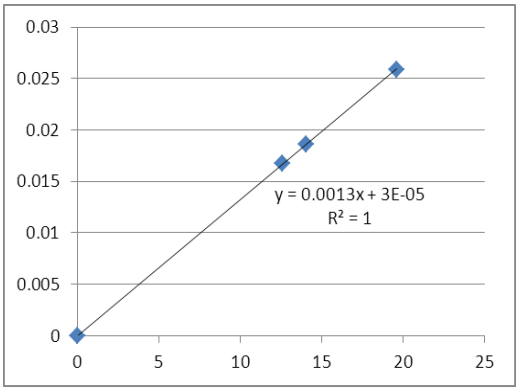
Sensitivity Adjustment Scale Setting (After Calibration) 595 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0013

Correlation Coefficient 1.0000

Validity of Calibration Record 5 December 2012



Operator : Tony Wong Signature : Date : 5 December 2012

QC Reviewer : Ben Tam Signature : Date : 5 December 2012

Equipment Calibration Record

AUES

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3
Serial No.	362359
Equipment Ref:	EQ096
Sensitivity	769 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 021
Last Calibration Date:	22 November 2012

Equipment Calibration Results:

Calibration Date: 22 November 2012

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
15	17:00 ~ 08:00	25.1	1011.1	0.0186	15104	16.8
3	08:00 ~ 11:00	22.4	1013.5	0.0167	2316	14.2
5	11:00 ~ 16:00	22.4	1013.5	0.0259	6606	22.5

Sensitivity Adjustment Scale Setting (Before Calibration) 774 (CPM)

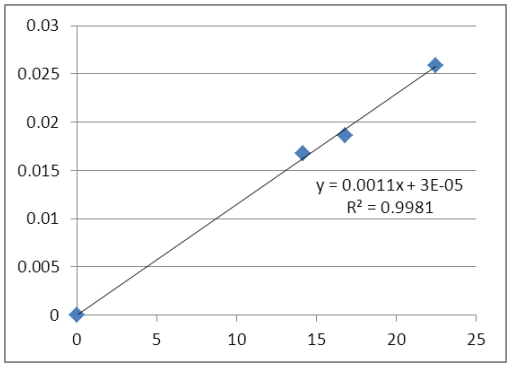
Sensitivity Adjustment Scale Setting (After Calibration) 767 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0011

Correlation Coefficient 0.9981

Validity of Calibration Record 5 December 2012



Operator : Tony Wong Signature : Date : 5 December 2012

QC Reviewer : Ben Tam Signature : Date : 5 December 2012

Equipment Calibration Record

AUES

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	2X6146
Equipment Ref:	EQ106
Sensitivity	582 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 021
Last Calibration Date:	22 November 2012

Equipment Calibration Results:

Calibration Date: 22 November 2012

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
15	17:00 ~ 08:00	25.1	1011.1	0.0186	13682	15.3
3	08:00 ~ 11:00	22.4	1013.5	0.0167	2236	13.7
5	11:00 ~ 16:00	22.4	1013.5	0.0259	6195	21.1

Sensitivity Adjustment Scale Setting (Before Calibration) 584 (CPM)

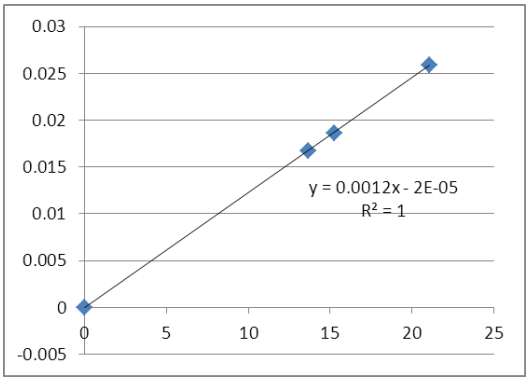
Sensitivity Adjustment Scale Setting (After Calibration) 584 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0012

Correlation Coefficient 1.0000

Validity of Calibration Record 5 December 2012



Operator : Tony Wong Signature : Date : 5 December 2012

QC Reviewer : Ben Tam Signature : Date : 5 December 2012

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

Certificate of Calibration
校正證書

Certificate No. : C132228
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-0878)

Description / 儀器名稱 : Acoustical Calibrator (EQ081)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2326408
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 April 2013

TEST RESULTS / 測試結果

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 測試 : K C Lee

Certified By 核證 : K M Wu

Date of Issue 簽發日期 : 16 April 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C132228
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 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	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	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 Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with 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.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C132568
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-0878)

Description / 儀器名稱	:	Integrating Sound Level Meter (EQ006)
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	2238
Serial No. / 編號	:	2285762
Supplied By / 委託者	:	Action-United Environmental Services and Consulting Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 27 April 2013

TEST RESULTS / 測試結果

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
- Agilent Technologies, USA
- Fluke Everett Service Center, USA
- Rohde & Schwarz Laboratory, Germany

Tested By / 測試 : H C Chan

Certified By / 核證 : K C Lee

Date of Issue / 簽發日期 : 30 April 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C132568
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

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	C130019
CL281	Multifunction Acoustic Calibrator	DC110233

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	93.6

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	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	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C132568
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	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	101.9	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	55.1	-39.4 ± 1.5
					63 Hz	67.9	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

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Certificate of Calibration
校正證書

Certificate No. : C132568
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	89.8	± 0.5
			60 sec.			$1/10^3$		80	79.4	± 1.0
			5 min.			$1/10^4$		70	69.2	± 1.0

Remarks : - Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 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 Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with 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.

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

Certificate of Calibration
校正證書

Certificate No. : C132567
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-0878)

Description / 儀器名稱	:	Integrating Sound Level Meter (EQ010)
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	2238
Serial No. / 編號	:	2285721
Supplied By / 委託者	:	Action-United Environmental Services and Consulting Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 27 April 2013

TEST RESULTS / 測試結果

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
- Agilent Technologies, USA
- Fluke Everett Service Center, USA
- Rohde & Schwarz Laboratory, Germany

Tested By / 測試 : H C Chan

Certified By / 核證 : K C Lee

Date of Issue / 簽發日期 : 30 April 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
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Certificate No. : C132567
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1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

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	C130019
CL281	Multifunction Acoustic Calibrator	DC110233

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.7

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	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	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

Certificate of Calibration
校正證書

Certificate No. : C132567
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.1	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	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 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.9	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.0
					250 Hz	85.4	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.3	+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	89.8	-4.3 (+3.0 ; -6.0)

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Certificate of Calibration
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Certificate No. : C132567
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	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	93.9	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-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	87.9	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	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	79.9	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

Remarks : - Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 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 Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with 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.

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ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	**WORK ORDER:**	HK1312248
CLIENT:	ACTION UNITED ENVIRO SERVICES	**LABORATORY:**	HONG KONG
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	**DATE RECEIVED:**	07/05/2013
		DATE OF ISSUE:	14/05/2013
PROJECT:	--		

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal aceptance criteria of ALS will be followed.

Scope of Test:	Dissolved Oxygen, pH, Salinity and Temperature
Equipment Type:	Multimeter
Brand Name:	YSI
Model No.:	YSI PROFESSIONAL PLUS
Serial No.:	10G101946
Equipment No.:	--
Date of Calibration:	10 May, 2013

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1312248
Date of Issue: 14/05/2013
Client: ACTION UNITED ENVIRO SERVICES

Equipment Type: Multimeter
Brand Name: YSI
Model No.: YSI PROFESSIONAL PLUS
Serial No.: 10G101946
Equipment No.: --
Date of Calibration: 10 May, 2013 Date of next Calibration: 10 August, 2013

Parameters:

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.30	3.20	-0.10
6.46	6.37	-0.09
8.16	8.17	0.01
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.13	0.13
7.0	7.12	0.12
10.0	9.96	-0.04
	Tolerance Limit (±pH unit)	0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.00	--
10	9.72	-2.8
20	19.56	-2.2
30	30.20	0.7
	Tolerance Limit (±%)	10.0

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
9.0	9.8	0.8
22.0	22.1	0.1
38.5	38.7	0.2
	Tolerance Limit (±°C)	2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	**WORK ORDER:**	HK1311639
CLIENT:	ACTION UNITED ENVIRO SERVICES	**LABORATORY:**	HONG KONG
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	**DATE RECEIVED:**	30/04/2013
		DATE OF ISSUE:	09/05/2013
PROJECT:	--		

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal aceptance criteria of ALS will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	HACH
Model No.:	2100Q
Serial No.:	12060C018266
Equipment No.:	--
Date of Calibration:	07 May, 2013

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

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Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1311639
Date of Issue: 09/05/2013
Client: ACTION UNITED ENVIRO SERVICES

Equipment Type: Turbidimeter
Brand Name: HACH
Model No.: 2100Q
Serial No.: 12060C018266
Equipment No.: --
Date of Calibration: 07 May, 2013 Date of next Calibration: 07 August, 2013

Parameters:

Turbidity **Method Ref: APHA 21st Ed. 2130B**

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.13	--
4	4.28	7.0
40	42.3	5.7
80	77.5	-3.1
400	382	-4.5
800	797	-0.4
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	**WORK ORDER:**	HK1311250
CLIENT:	ACTION UNITED ENVIRO SERVICES	**LABORATORY:**	HONG KONG
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG	**DATE RECEIVED:**	26/04/2013
		DATE OF ISSUE:	06/05/2013
PROJECT:	--		

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal aceptance criteria of ALS will be followed.

Scope of Test:	pH and Temperature
Equipment Type:	pH meter
Brand Name:	ECO SENSE
Model No.:	Ph10a
Serial No.:	jc000488
Equipment No.:	--
Date of Calibration:	30 April, 2013

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

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Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1311250
Date of Issue: 06/05/2013
Client: ACTION UNITED ENVIRO SERVICES

Equipment Type: pH meter
Brand Name: ECO SENSE
Model No.: Ph10a
Serial No.: jc000488
Equipment No.: --
Date of Calibration: 30 April, 2013 Date of next Calibration: 30 July, 2013

Parameters:

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.09	0.09
7.0	7.00	0.00
10.0	9.85	-0.15
	Tolerance Limit (±pH unit)	0.20

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
9.0	9.8	0.8
22.0	22.2	0.2
35.5	36.1	0.6
	Tolerance Limit (±°C)	2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

Appendix E

HOKLAS-accreditation Certificate of the Testing Laboratory

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作（見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報）。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
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Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

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Appendix F

Baseline Monitoring Schedules

Baseline Air and Noise Monitoring Schedule

Date		Noise Monitoring	Air Quality	
			1-hour TSP Monitoring	24-hour TSP Monitoring
13-Jun-13	Thu	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
14-Jun-13	Fri	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
15-Jun-13	Sat	***Cancelled***	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
16-Jun-13	Sun	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
17-Jun-13	Mon	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
18-Jun-13	Tue	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
19-Jun-13	Wed	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
20-Jun-13	Thu	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
21-Jun-13	Fri	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
22-Jun-13	Sat	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
23-Jun-13	Sun	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
24-Jun-13	Mon	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
25-Jun-13	Tue	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
26-Jun-13	Wed	NM3, NM4, NM5, NM6, NM8, NM9 and NM10	AM4a, AM5, AM6, AM7a and AM9a	AM4a, AM5, AM6, AM7a and AM9a
27-Jun-13	Thu	NM1, NM2,NM3, NM4, NM5, NM6, NM7, NM8, NM9 and NM10	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
28-Jun-13	Fri	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM2, AM3 and AM8
29-Jun-13	Sat	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM2, AM3 and AM8
30-Jun-13	Sun	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
01-Jul-13	Mon	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
02-Jul-13	Tue	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
03-Jul-13	Wed	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
04-Jul-13	Thu	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
05-Jul-13	Fri	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
06-Jul-13	Sat	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
07-Jul-13	Sun	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
08-Jul-13	Mon	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
09-Jul-13	Tue	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
10-Jul-13	Wed	NM1, NM2 and NM7	AM1, AM2, AM3 and AM8	AM1, AM2, AM3 and AM8
11-Jul-13	Thu			AM1
12-Jul-13	Fri			AM1

Baseline Water Quality Monitoring Schedule

Scheduled Monitoring Day		
The First Week	14 June 2013	Friday
The Second Week	17 June 2013	Monday
	19 June 2013	Wednesday
	21 June 2013	Friday
The Third Week	24 June 2013	Monday
	26 June 2013	Wednesday
	29 June 2013	Saturday
The Forth Week	2 July 2013	Tuesday
	4 July 2013	Thursday
	6 July 2013	Saturday
The Fifth Week	8 July 2013	Monday
	10 July 2013	Wednesday

Appendix G

Meteorological Data during Baseline Monitoring (Ta Kwu Ling Station)

Date		Weather	Total Rainfall (mm)	Ta Kwu Ling Station			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
13-Jun-13	Thu	Cloudy, a few showers, moderate to fresh northeasterly winds.	1.4	24.6	6.4	84.5	N
14-Jun-13	Fri	Cloudy, rain, moderate to fresh easterly winds, strong offshore and on high ground.	30.8	25.5	7.5	87	N/NW
15-Jun-13	Sat	Cloudy, rain, moderate to fresh easterly winds, strong offshore and on high ground.	62	25.7	26.6	98	E
16-Jun-13	Sun	Hot, sunny periods , a few showers, moderate east to southeasterly winds	5.4	27.8	11.4	88.5	E
17-Jun-13	Mon	Hot, sunny periods , a few showers, moderate east to southeasterly winds	6.5	28.7	9.1	85.5	E
18-Jun-13	Tue	Hot, sunny periods, isolated showers, Moderate southeasterly winds.	Trace	29.5	5	85	E
19-Jun-13	Wed	Hot, sunny periods, isolated showers, Moderate southeasterly winds.	0	29.7	5.3	74.7	SW
20-Jun-13	Thu	Hot, sunny periods , a few showers, moderate east to southeasterly winds	0	30.3	6.4	74	S/SW
21-Jun-13	Fri	Hot, sunny periods , a few showers, moderate east to southeasterly winds	0.8	30.1	9	75.7	E
22-Jun-13	Sat	Hot, sunny periods, isolated showers, Moderate southeasterly winds.	15.2	26.9	30	90	E/SE
23-Jun-13	Sun	Cloudy, rain, Moderate to fresh southerly winds.	12.1	28.1	8.1	84	S/SE
24-Jun-13	Mon	Cloudy, rain, Moderate to fresh southerly winds.	57	26.8	6.5	88	E/SE
25-Jun-13	Tue	Hot, isolated showers, moderate to fresh southwesterly winds	0.7	28.4	8.6	85.7	S/SW
26-Jun-13	Wed	Hot, isolated showers, moderate to fresh southwesterly winds	Trace	29.8	10	76.7	S/SW
27-Jun-13	Thu	Hot, isolated showers, moderate to fresh southwesterly winds	1.2	29.9	9.3	75	S/SW
28-Jun-13	Fri	Hot, isolated showers, moderate to fresh southwesterly winds	0.2	29.3	8.2	78.7	S/SW
29-Jun-13	Sat	Fine, hot, moderate to fresh southeasterly winds	Trace	29.8	14	79	S/SW
30-Jun-13	Sun	Fine, hot, moderate to fresh southeasterly winds	0	29.8	14.5	77	S/SW
1-Jul-13	Mon	Fine, very hot, light to moderate southerly winds.	29.5	28.8	13.1	80.7	E
2-Jul-13	Tue	Fine, very hot, light to moderate southerly winds.	0	29.7	11.2	75	SE
3-Jul-13	Wed	Fine, very hot, light to moderate southerly winds.	Trace	29.2	6.5	79	S/SE
4-Jul-13	Thu	Fine, very hot, light to moderate southerly winds.	Trace	29.2	5.6	74.7	SW
5-Jul-13	Fri	Fine, very hot, light to moderate southerly winds.	0	29	4.8	76.5	SW
6-Jul13	Sat	Cloudy, a few showers, moderate south to southeasterly winds.	4.6	28.2	7.1	81	S/SW
7-Jul-13	Sun	Cloudy, a few showers, moderate south to southeasterly winds.	40.7	28.4	9.3	77.2	E/SE
8-Jul-13	Mon	Hot, sunny periods, moderate south to southeasterly winds.	0.3	28.3	6.1	74	S/SW
9-Jul-13	Tue	Cloudy, showers, Light to moderate south to southeasterly winds.	Trace	27.8	8	79.2	E/NE
10-Jul-13	Wed	Hot, sunny periods, moderate south to southeasterly winds.	14.2	28	8.6	83.5	N/NW
11-Jul-13	Thu	Hot, sunny periods, moderate south to southeasterly winds.	0.3	Maintenance	5.3	Maintenance	S/SE
12-Jul-13	Fri	Fine, very hot. Light to moderate southerly winds.	0	29.1	4.4	79	W/SW

Appendix H

Monitoring Results Data

- **Air Quality (24-hour TSP);**
- **Noise; and**
- **Water Quality**

Air Quality (24-hour TSP)

24-Hr TSP Monitoring Data for AM1

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
29-Jun-13	25727	6961.39	6983.99	1356.00	35	37	36.0	28.6	1006.1	1.06	1444	3.6189	3.6457	0.0268	19
30-Jun-13	25784	6983.99	7008.33	1460.40	36	37	36.5	28.7	1006.2	1.08	1579	3.6384	3.6751	0.0367	23
1-Jul-13	25768	7008.33	7032.02	1421.40	35	37	36.0	28.7	1006.2	1.06	1513	3.6233	3.6542	0.0309	20
2-Jul-13	25772	7032.02	7056.24	1453.20	36	37	36.5	28.7	1006.4	1.08	1571	3.6402	3.6674	0.0272	17
3-Jul-13	25779	7056.24	7079.61	1402.20	34	35	34.5	28.8	1006.5	1.02	1424	3.6270	3.6502	0.0232	16
4-Jul-13	25731	7079.61	7101.76	1329.00	34	36	35.0	28.7	1006.4	1.03	1371	3.6182	3.6483	0.0301	22
5-Jul-13	25774	7101.76	7125.93	1450.20	34	35	34.5	28.8	1006.3	1.02	1472	3.6302	3.6602	0.0300	20
6-Jul-13	25736	7125.93	7149.58	1419.00	35	36	35.5	28.8	1006.1	1.05	1487	3.6309	3.6560	0.0251	17
7-Jul-13	25743	7149.58	7173.99	1464.60	33	36	34.5	28.8	1006.3	1.02	1487	3.6180	3.6425	0.0245	16
8-Jul-13	25744	7173.99	7197.51	1411.20	32	36	34.0	28.8	1010.8	1.00	1413	3.6215	3.6418	0.0203	14
9-Jul-13	25749	7197.51	7221.15	1418.40	32	34	33.0	29.0	1005.7	0.97	1369	3.6225	3.6490	0.0265	19
10-Jul-13	25788	7221.15	7244.38	1393.80	31	34	32.5	29.0	1005.7	0.95	1323	3.6314	3.6556	0.0242	18
11-Jul-13	25815	7244.38	7268.14	1425.60	33	35	34.0	29.0	1005.8	1.00	1423	3.6305	3.6706	0.0401	28
12-Jul-13	25792	7268.14	7292.17	1441.80	32	34	33.0	29.1	1005.2	0.97	1391	3.6242	3.6580	0.0338	24

24-Hr TSP Monitoring Data for AM2

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
27-Jun-13	25716	2443.65	2467.52	1432.20	32	34	33.0	28.5	1005.7	0.97	1384	3.6166	3.6603	0.0437	32
28-Jun-13	25725	2467.52	2490.92	1404.00	34	36	35.0	28.5	1006.0	1.03	1449	3.6154	3.6511	0.0357	25
29-Jun-13	25730	2490.92	2514.04	1387.20	33	36	34.5	28.6	1006.1	1.02	1409	3.6164	3.6584	0.0420	30
30-Jun-13	25785	2514.04	2537.39	1401.00	38	40	39.0	28.7	1006.2	1.16	1629	3.6273	3.6660	0.0387	24
1-Jul-13	25769	2537.39	2560.72	1399.80	35	38	36.5	28.7	1006.3	1.08	1513	3.6271	3.6601	0.0330	22
2-Jul-13	25773	2560.72	2584.12	1404.00	36	38	37.0	28.7	1006.4	1.10	1541	3.6176	3.6569	0.0393	26
3-Jul-13	25784	2584.12	2607.31	1391.40	35	37	36.0	28.8	1006.5	1.06	1481	3.6263	3.6583	0.0320	22
4-Jul-13	25732	2607.31	2630.86	1413.00	34	36	35.0	28.7	1006.4	1.03	1458	3.6251	3.6581	0.0330	23
5-Jul-13	25775	2630.86	2654.42	1413.60	33	35	34.0	28.8	1006.3	1.00	1412	3.6238	3.6808	0.0570	40
6-Jul-13	25737	2654.42	2677.77	1401.00	35	36	35.5	28.7	1006.1	1.05	1468	3.6307	3.6684	0.0377	26
7-Jul-13	25742	2677.77	2701.51	1424.40	34	36	35.0	28.8	1006.3	1.03	1470	3.6174	3.6672	0.0498	34
8-Jul-13	25745	2701.51	2725.19	1420.80	32	33	32.5	28.8	1010.8	0.95	1353	3.6136	3.6639	0.0503	37
9-Jul-13	25750	2725.19	2749.15	1437.60	33	34	33.5	29.0	1005.7	0.98	1412	3.6173	3.6634	0.0461	33
10-Jul-13	25794	2749.15	2773.24	1445.40	33	34	33.5	29.0	1005.7	0.98	1419	3.6321	3.6765	0.0444	31

24-Hr TSP Monitoring Data for AM3

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
27-Jun-13	25717	3328.58	3351.8	1393.20	36	38	37.0	28.5	1005.7	1.10	1529	3.6228	3.6585	0.0357	23
28-Jun-13	25724	3351.80	3375.41	1416.60	35	36	35.5	28.5	1006.0	1.05	1485	3.6197	3.6495	0.0298	20
29-Jun-13	25728	3375.41	3399.28	1432.20	34	36	35.0	28.6	1006.1	1.03	1478	3.6281	3.6545	0.0264	18
30-Jun-13	25786	3399.28	3422.56	1396.80	40	42	41.0	28.7	1006.2	1.23	1716	3.6311	3.6660	0.0349	20
1-Jul-13	25770	3422.56	3445.97	1404.60	40	42	41.0	28.7	1006.3	1.23	1725	3.6216	3.6554	0.0338	20
2-Jul-13	25782	3445.97	3469.54	1414.20	38	40	39.0	28.7	1006.4	1.16	1645	3.6274	3.6548	0.0274	17
3-Jul-13	25781	3469.54	3493.3	1425.60	38	42	40.0	28.8	1006.5	1.20	1704	3.6254	3.6584	0.0330	19
4-Jul-13	25733	3493.30	3517.23	1435.80	39	40	39.5	28.7	1006.4	1.18	1693	3.6295	3.6719	0.0424	25
5-Jul-13	25778	3517.23	3540.9	1420.20	38	40	39.0	28.8	1006.3	1.16	1651	3.6284	3.6622	0.0338	20
6-Jul-13	25738	3540.90	3564.29	1403.40	37	39	38.0	28.7	1006.1	1.13	1586	3.6280	3.6665	0.0385	24
7-Jul-13	25741	3564.29	3588.03	1424.40	38	40	39.0	28.8	1006.3	1.16	1656	3.6279	3.6587	0.0308	19
8-Jul-13	25746	3588.03	3611.17	1388.40	39	41	40.0	28.8	1010.8	1.20	1664	3.6155	3.6639	0.0484	29
9-Jul-13	25751	3611.17	3634.38	1392.60	38	41	39.5	29.0	1005.7	1.18	1641	3.6204	3.6704	0.0500	30
10-Jul-13	25790	3634.38	3658.15	1426.20	38	40	39.0	29.0	1005.7	1.16	1657	3.6237	3.6793	0.0556	34

24-Hr TSP Monitoring Data for AM4a

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
13-Jun-13	204745	6642.26	6665.62	1401.60	30	32	31.0	27.8	1006.5	0.90	1265	3.6660	3.6948	0.0288	23
14-Jun-13	25631	6665.62	6689.45	1429.80	28	30	29.0	27.8	1006.3	0.84	1196	3.5544	3.5802	0.0258	22
15-Jun-13	25626	6689.45	6713.39	1436.40	25	29	27.0	28.0	1006.0	0.77	1107	3.5544	3.5765	0.0221	20
16-Jun-13	25625	6713.39	6736.78	1403.40	28	30	29.0	28.0	1005.8	0.84	1174	3.5525	3.5775	0.0250	21
17-Jun-13	204741	6736.78	6760.05	1396.20	32	34	33.0	28.1	1005.7	0.97	1350	3.6590	3.6886	0.0296	22
18-Jun-13	25672	6760.05	6783.55	1410.00	32	33	32.5	28.2	1005.8	0.95	1340	3.5400	3.5718	0.0318	24
19-Jun-13	25673	6783.55	6807.63	1444.80	30	32	31.0	28.4	1005.9	0.90	1302	3.5431	3.5860	0.0429	33
20-Jun-13	25685	6807.63	6831.02	1403.40	28	30	29.0	28.5	1005.8	0.84	1172	3.5321	3.5750	0.0429	37
21-Jun-13	25678	6831.02	6854.64	1417.20	28	30	29.0	28.6	1005.5	0.84	1184	3.5414	3.5871	0.0457	39
22-Jun-13	204706	6854.64	6878.2	1413.60	30	31	30.5	28.6	1005.1	0.88	1250	3.6489	3.6851	0.0362	29
23-Jun-13	25695	6878.20	6901.34	1388.40	26	28	27.0	28.6	1004.8	0.77	1068	3.5344	3.5664	0.0320	30
24-Jun-13	25704	6901.34	6924.94	1416.00	29	32	30.5	28.6	1004.7	0.88	1252	3.5924	3.6248	0.0324	26
25-Jun-13	25705	6924.94	6948.78	1430.40	31	32	31.5	28.5	1004.9	0.92	1311	3.5962	3.6356	0.0394	30
26-Jun-13	25711	6948.78	6972.29	1410.60	30	31	30.5	28.5	1005.3	0.88	1247	3.6322	3.6645	0.0323	26

24-Hr TSP Monitoring Data for AM5

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
13-Jun-13	204746	2127.49	2150.99	1410.00	35	37	36.0	27.8	1006.5	1.07	1504	3.6617	3.6976	0.0359	24
14-Jun-13	25632	2150.99	2174.95	1437.60	36	38	37.0	27.8	1006.3	1.10	1580	3.5481	3.5730	0.0249	16
15-Jun-13	25627	2174.95	2198.62	1420.20	36	37	36.5	28.0	1006.0	1.08	1537	3.5588	3.5824	0.0236	15
16-Jun-13	25624	2198.62	2221.78	1389.60	36	38	37.0	28.0	1005.8	1.10	1527	3.5539	3.5798	0.0259	17
17-Jun-13	204742	2221.78	2244.82	1382.40	38	40	39.0	28.1	1005.7	1.16	1609	3.6615	3.6848	0.0233	14
18-Jun-13	25669	2244.82	2268.02	1392.00	38	40	39.0	28.2	1005.8	1.16	1620	3.5306	3.5554	0.0248	15
19-Jun-13	25674	2268.02	2291.46	1406.40	37	38	37.5	28.4	1005.9	1.11	1567	3.5368	3.5882	0.0514	33
20-Jun-13	25686	2291.46	2315.08	1417.20	38	40	39.0	28.5	1005.8	1.16	1648	3.5280	3.5785	0.0505	31
21-Jun-13	25679	2315.08	2338.08	1380.00	38	40	39.0	28.6	1005.5	1.16	1604	3.5475	3.5804	0.0329	21
22-Jun-13	25691	2338.08	2361.21	1387.80	36	38	37.0	28.6	1005.1	1.10	1522	3.5246	3.5548	0.0302	20
23-Jun-13	25696	2357.21	2384.69	1648.80	38	42	40.0	28.6	1004.8	1.19	1970	3.5386	3.5714	0.0328	17
24-Jun-13	25701	2384.69	2408.4	1422.60	37	40	38.5	28.6	1004.7	1.15	1630	3.5461	3.5759	0.0298	18
25-Jun-13	25706	2408.40	2432.22	1429.20	37	38	37.5	28.5	1004.9	1.11	1591	3.6024	3.6357	0.0333	21
26-Jun-13	25710	2432.22	2455.65	1405.80	36	38	37.0	28.5	1005.3	1.10	1542	3.6196	3.6486	0.0290	19

24-Hr TSP Monitoring Data for AM6

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
13-Jun-13	25107	13006.54	13030.21	1420.20	40	42	41.0	27.8	1006.5	1.23	1748	3.5564	3.5982	0.0418	24
14-Jun-13	204744	13030.21	13053.3	1385.40	40	42	41.0	27.8	1006.3	1.23	1705	3.6665	3.7063	0.0398	23
15-Jun-13	25628	13053.30	13076.4	1386.00	40	41	40.5	28.0	1006.0	1.21	1682	3.5544	3.5935	0.0391	23
16-Jun-13	25623	13076.40	13100.12	1423.20	41	44	42.5	28.0	1005.8	1.28	1820	3.5449	3.5903	0.0454	25
17-Jun-13	204743	13100.12	13124	1432.80	42	44	43.0	28.1	1005.7	1.29	1855	3.6675	3.7368	0.0693	37
18-Jun-13	25670	13124.00	13147.25	1395.00	42	43	42.5	28.2	1005.8	1.28	1783	3.5335	3.5817	0.0482	27
19-Jun-13	25675	13147.25	13170.92	1420.20	41	42	41.5	28.4	1005.9	1.25	1769	3.5453	3.6139	0.0686	39
20-Jun-13	25687	13170.92	13194.9	1438.80	42	43	42.5	28.5	1005.8	1.28	1838	3.5328	3.6008	0.0680	37
21-Jun-13	25680	13194.90	13218.42	1411.20	41	42	41.5	28.6	1005.5	1.24	1756	3.5466	3.5848	0.0382	22
22-Jun-13	25692	13218.42	13242.3	1432.80	40	41	40.5	28.6	1005.1	1.21	1736	3.5269	3.5633	0.0364	21
23-Jun-13	25697	13242.30	13266.02	1423.20	40	44	42.0	28.6	1004.8	1.26	1794	3.5344	3.5706	0.0362	20
24-Jun-13	25702	13266.02	13290.06	1442.40	41	42	41.5	28.6	1004.7	1.24	1794	3.5522	3.5906	0.0384	21
25-Jun-13	25707	13290.06	13313.51	1407.00	42	43	42.5	28.5	1004.9	1.28	1797	3.6286	3.6978	0.0692	39
26-Jun-13	25712	13313.51	13336.88	1402.20	41	44	42.5	28.5	1005.3	1.28	1791	3.6274	3.6854	0.0580	32

24-Hr TSP Monitoring Data for AM7a

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
13-Jun-13	204747	12648.81	12672.01	1392.00	38	40	39.0	27.8	1006.5	1.16	1622	3.6612	3.7364	0.0752	46
14-Jun-13	25633	12672.01	12695.19	1390.80	38	41	39.5	27.8	1006.3	1.18	1643	3.5544	3.6441	0.0897	55
15-Jun-13	25628	12695.19	12718.93	1424.40	40	42	41.0	28.0	1006.0	1.23	1752	3.5511	3.6266	0.0755	43
16-Jun-13	25622	12718.93	12742.01	1384.80	40	44	42.0	28.0	1005.8	1.26	1748	3.5465	3.6096	0.0631	36
17-Jun-13	25619	12742.01	12765.02	1380.60	39	43	41.0	28.1	1005.7	1.23	1697	3.5427	3.6072	0.0645	38
18-Jun-13	25671	12765.02	12788.09	1384.20	40	43	41.5	28.2	1005.8	1.25	1724	3.5311	3.6019	0.0708	41
19-Jun-13	25676	12788.09	12811.34	1395.00	40	44	42.0	28.4	1005.9	1.26	1760	3.5426	3.6031	0.0605	34
20-Jun-13	25688	12811.34	12834.37	1381.80	42	43	42.5	28.5	1005.8	1.28	1766	3.5316	3.5957	0.0641	36
21-Jun-13	25681	12834.37	12857.68	1398.60	41	43	42.0	28.6	1005.5	1.26	1763	3.5416	3.6087	0.0671	38
22-Jun-13	25693	12857.68	12881.35	1420.20	40	42	41.0	28.6	1005.1	1.23	1744	3.5275	3.5859	0.0584	33
23-Jun-13	25698	12881.35	12904.64	1397.40	42	44	43.0	28.6	1004.8	1.29	1807	3.5386	3.5999	0.0613	34
24-Jun-13	25703	12904.64	12928.18	1412.40	40	43	41.5	28.6	1004.7	1.24	1757	3.5911	3.6624	0.0713	41
25-Jun-13	25708	12928.18	12952.2	1441.20	41	42	41.5	28.5	1004.9	1.24	1793	3.6124	3.6808	0.0684	38
26-Jun-13	25713	12952.20	12975.96	1425.60	42	43	42.5	28.5	1005.3	1.28	1821	3.6267	3.6995	0.0728	40

24-Hr TSP Monitoring Data for AM8

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
27-Jun-13	25715	5973.46	5997.52	1443.60	40	42	41.0	28.5	1005.7	1.23	1773	3.6216	3.6600	0.0384	22
28-Jun-13	25723	5997.52	6021.99	1468.20	28	30	29.0	18.5	1006.0	0.85	1250	3.6160	3.6523	0.0363	29
29-Jun-13	25729	6021.99	6045.95	1437.60	40	42	41.0	28.6	1006.1	1.23	1766	3.6204	3.6604	0.0400	23
30-Jun-13	25767	6045.95	6069.24	1397.40	40	42	41.0	28.7	1006.2	1.23	1717	3.6291	3.6760	0.0469	27
1-Jul-13	25771	6069.24	6092.36	1387.20	40	42	41.0	28.7	1006.3	1.23	1704	3.6211	3.6575	0.0364	21
2-Jul-13	25772	6092.36	6115.84	1408.80	42	43	42.5	28.7	1006.4	1.28	1800	3.6201	3.6510	0.0309	17
3-Jul-13	25778	6115.84	6139.57	1423.80	40	42	41.0	28.8	1006.5	1.23	1749	3.6248	3.6608	0.0360	21
4-Jul-13	25734	6139.57	6163.34	1426.20	37	39	38.0	28.7	1006.4	1.13	1612	3.6275	3.6652	0.0377	23
5-Jul-13	25777	6163.34	6186.74	1404.00	40	42	41.0	28.8	1006.3	1.23	1724	3.6243	3.6707	0.0464	27
6-Jul-13	25739	6186.74	6210.45	1422.60	37	40	38.5	28.7	1006.1	1.15	1631	3.6306	3.6625	0.0319	20
7-Jul-13	25740	6210.45	6234.13	1420.80	40	43	41.5	28.8	1006.3	1.24	1768	3.6130	3.6526	0.0396	22
8-Jul-13	25747	6234.13	6257.95	1429.20	38	41	39.5	28.8	1010.8	1.18	1689	3.6140	3.6497	0.0357	21
9-Jul-13	25748	6257.95	6281.7	1425.00	40	42	41.0	29.0	1005.7	1.23	1749	3.6222	3.6585	0.0363	21
10-Jul-13	25789	6281.70	6305.19	1409.40	39	41	40.0	29.0	1005.7	1.19	1684	3.6247	3.6584	0.0337	20

24-Hr TSP Monitoring Data for AM9a

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP ($\mu g/m^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
13-Jun-13	204748	5662.48	5685.69	1392.60	40	42	41.0	27.8	1006.3	1.23	1714	3.6718	3.7653	0.0935	55
14-Jun-13	25618	5685.69	5709.57	1432.80	41	43	42.0	27.8	1006.3	1.26	1810	3.5451	3.6269	0.0818	45
15-Jun-13	25630	5709.57	5733.13	1413.60	40	44	42.0	28.0	1006.0	1.26	1785	3.5523	3.6141	0.0618	35
16-Jun-13	25621	5733.13	5756.86	1423.80	40	42	41.0	28.0	1005.8	1.23	1751	3.5513	3.6146	0.0633	36
17-Jun-13	25620	5756.86	5780.20	1400.40	40	41	40.5	28.1	1005.7	1.21	1699	3.5468	3.5936	0.0468	28
18-Jun-13	25653	5780.20	5804.00	1428.00	39	41	40.0	28.2	1005.8	1.20	1709	3.5233	3.5650	0.0417	24
19-Jun-13	25677	5804.00	5827.14	1388.40	37	40	38.5	28.4	1005.9	1.15	1592	3.5388	3.5700	0.0312	20
20-Jun-13	25690	5827.14	5850.55	1404.60	43	44	43.5	28.5	1005.8	1.31	1841	3.5283	3.5714	0.0431	23
21-Jun-13	25682	5850.55	5874.09	1412.40	42	43	42.5	28.6	1005.5	1.28	1804	3.5352	3.6117	0.0765	42
22-Jun-13	25694	5874.09	5897.82	1423.80	39	41	40.0	28.6	1005.1	1.20	1702	3.5376	3.5736	0.0360	21
23-Jun-13	25699	5897.82	5921.73	1434.60	41	43	42.0	28.6	1004.8	1.26	1808	3.5390	3.5781	0.0391	22
24-Jun-13	25700	5921.73	5944.93	1392.00	42	43	42.5	28.6	1004.7	1.28	1777	3.5418	3.5890	0.0472	27
25-Jun-13	25709	5944.93	5968.78	1431.00	40	42	41.0	28.5	1004.9	1.23	1757	3.6259	3.7019	0.0760	43
26-Jun-13	25714	5968.78	5992.06	1396.80	41	42	41.5	28.5	1005.3	1.24	1738	3.6355	3.7020	0.0665	38

Noise

Noise Measurement Results (dB) of NM1

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
27-Jun-13	10:46	53.2	56.0	48.0	49.9	51.5	48.0	51.1	52.5	48.5	50.5	51.5	48.5	50.3	51.5	48.5	52.6	56.5	48.0	**51**	NA
28-Jun-13	16:53	56.5	60.8	43.4	55.0	57.3	43.8	52.4	55.3	41.4	50.4	55.8	43.7	55.5	60.8	44.1	55.8	60.8	44.1	**55**	NA
29-Jun-13	14:50	48.7	59.7	43.3	48.4	55.3	46.1	49.6	52.2	46.3	48.0	49.7	45.8	42.5	44.9	42.0	41.9	44.5	42.5	**47**	NA
*30-Jun-13	12:55	54.3	59.5	40.5	42.3	44.0	40.0	48.8	51.0	40.5										NA	**51**
*1-Jul-13	10:50	41.8	44.5	39.5	46.7	53.0	41.0	42.1	42.5	40.0										NA	**44**
2-Jul-13	10:07	49.3	43.5	38.5	43.7	49.0	37.5	41.0	44.5	37.0	44.7	46.0	40.5	42.5	44.5	39.5	45.1	46.5	39.5	**45**	NA
3-Jul-13	16:05	51.3	53.5	44.1	47.5	48.9	43.9	50.2	53.6	44.6	53.3	66.3	44.7	49.8	51.6	47.2	56.7	61.2	48.7	**53**	NA
4-Jul-13	15:33	50.3	51.4	49.1	51.3	53.0	49.4	51.3	52.6	48.9	50.4	51.7	48.7	49.3	50.4	48.2	49.9	51.3	48.4	**50**	NA
5-Jul-13	17:08	55.0	56.8	47.7	61.0	55.0	46.7	47.4	49.6	44.5	56.3	56.5	44.7	51.9	54.1	48.5	50.8	52.7	48.2	**56**	NA
6-Jul-13	15:15	58.1	59.5	50.0	55.4	56.5	50.5	59.9	54.5	47.0	50.1	51.0	46.5	51.1	52.0	46.5	50.5	52.0	47.5	**56**	NA
*7-Jul-13	14:28	59.9	61.6	52.9	57.9	59.8	49.9	57.3	63.2	52.1										NA	59
8-Jul-13	10:15	60.4	61.7	46.6	65.3	68.8	46.9	59.3	62.9	46.0	57.1	61.5	46.8	53.5	57.9	45.2	55.2	60.4	44.1	**60**	NA
9-Jul-13	16:00	53.9	55.0	51.0	52.7	54.5	50.5	52.3	53.5	50.5	52.3	54.0	50.5	52.8	54.5	50.5	52.1	53.0	50.5	**53**	NA
10-Jul-13	15:30	52.5	54.8	50.2	57.8	60.9	54.8	55.6	57.3	47.2	52.7	54.7	51.0	50.9	54.7	50.7	51.0	52.3	41.4	**54**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM2

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
27-Jun-13	11:29	56.4	56.0	47.5	54.6	57.5	47.5	68.9	63.0	48.0	60.1	61.5	48.0	63.1	60.5	48.0	55.1	57.5	48.5	**63**	NA
28-Jun-13	16:18	57.7	60.4	45.7	54.2	56.3	45.4	50.2	53.4	43.3	57.3	58.5	46.7	52.8	57.6	44.7	49.1	53.9	46.1	**55**	NA
29-Jun-13	15:39	58.0	55.2	48.8	52.7	56.6	46.8	48.3	53.9	46.4	57.0	57.5	48.4	55.9	56.5	49.4	55.6	53.4	46.7	**56**	NA
*30-Jun-13	13:30	40.8	41.0	39.5	41.8	42.5	40.5	41.3	42.0	40.5										NA	**41**
*1-Jul-13	11:18	52.6	57.0	43.5	46.5	53.5	39.5	49.3	52.0	40.5										NA	**50**
2-Jul-13	10:57	51.9	53.0	47.5	52.9	54.0	46.0	48.9	49.5	47.0	47.3	49.0	45.0	51.0	52.5	47.5	49.6	51.0	46.5	**51**	NA
3-Jul-13	15:55	50.2	48.4	45.1	53.7	48.4	45.0	48.2	48.4	45.2	56.9	55.5	45.2	49.7	49.8	44.8	55.8	56.2	46.1	**54**	NA
4-Jul-13	15:31	63.7	65.5	44.8	66.3	71.7	44.7	66.9	61.0	43.5	59.1	61.5	45.7	55.2	57.2	44.0	64.6	67.2	45.0	**64**	NA
5-Jul-13	16:30	56.0	58.3	42.1	52.4	54.7	43.3	59.4	60.6	46.0	59.1	64.0	43.5	62.5	65.4	46.6	56.4	59.7	51.7	**59**	NA
6-Jul-13	15:14	58.9	61.8	54.6	63.7	66.7	49.3	57.9	56.7	48.4	62.0	63.7	48.9	57.8	60.1	48.2	63.1	66.8	49.3	**61**	NA
*7-Jul-13	14:20	52.0	56.2	51.4	53.6	57.3	50.2	51.5	54.5	49.0										NA	52
8-Jul-13	10:25	54.5	55.0	48.0	51.9	56.6	46.1	53.8	59.7	45.8	51.8	57.0	45.3	57.7	62.5	45.1	54.1	59.4	45.5	**54**	NA
9-Jul-13	15:54	66.1	64.8	44.5	57.2	58.4	44.3	52.5	55.2	44.8	57.2	60.9	46.0	59.4	60.3	44.6	50.8	51.0	43.4	**60**	NA
10-Jul-13	15:21	52.5	51.7	41.6	58.0	63.4	42.1	53.5	57.8	47.3	52.9	56.8	42.8	57.4	62.0	43.9	53.3	55.0	44.9	**55**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM3

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	12:35	51.2	54.5	47.5	57.6	62.0	47.0	54.9	56.5	47.5	56.8	60.0	49.0	73.7	78.0	49.5	66.6	68.0	48.0	**67**	NA
14-Jun-13	10:32	53.7	55.5	51.0	54.8	57.0	51.0	60.2	63.5	52.5	58.6	61.0	52.0	63.7	66.5	55.0	60.9	66.5	55.0	**60**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	12:20	55.6	59.5	47.0	58.5	62.0	47.5	50.3	50.5	47.0										NA	**56**
17-Jun-13	13:31	60.2	60.5	48.5	57.6	58.0	47.0	59.8	61.5	47.5	55.8	57.5	47.5	52.6	50.5	47.0	52.6	52.5	47.5	**57**	NA
18-Jun-13	11:29	62.2	66.5	49.0	54.7	56.0	48.5	49.8	50.5	48.5	59.7	60.0	48.5	58.0	55.0	48.5	55.4	56.5	48.5	**58**	NA
19-Jun-13	12:31	56.4	57.0	45.5	51.6	54.5	45.5	54.2	56.0	45.5	54.6	58.5	46.0	54.7	55.5	45.5	47.1	47.5	45.0	**54**	NA
20-Jun-13	11:10	60.0	64.2	50.5	54.5	57.0	48.9	56.6	62.2	48.8	50.2	52.4	47.7	49.1	50.7	47.7	53.4	56.5	47.8	**56**	NA
21-Jun-13	12:00	55.2	57.6	46.2	52.8	55.0	46.3	47.5	48.0	45.9	49.3	49.0	46.0	49.9	49.7	46.1	47.4	49.0	46.0	**51**	NA
22-Jun-13	13:17	56.8	58.0	48.5	53.1	55.5	47.0	49.9	52.0	48.5	50.5	53.5	47.0	52.0	53.5	48.5	54.3	55.5	48.0	**53**	NA
*23-Jun-13	10:54	52.6	54.0	45.0	53.2	55.5	44.5	47.8	50.0	43.5										NA	**52**
24-Jun-13	16:48	50.3	54.5	48.0	48.6	51.0	47.0	49.5	51.5	46.5	52.9	55.5	47.5	51.1	52.5	48.0	53.7	55.0	48.0	**51**	NA
25-Jun-13	11:35	55.8	59.1	43.9	51.9	57.3	42.2	53.4	57.1	42.1	58.3	63.1	47.6	57.4	59.0	42.8	52.2	57.0	42.5	**56**	NA
26-Jun-13	9:40	60.3	64.3	51.9	55.4	59.6	46.5	48.4	49.3	46.8	47.4	48.8	45.9	49.6	51.9	45.8	50.8	52.7	47.8	**55**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM4

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	12:15	55.0	56.8	41.4	52.6	55.9	40.8	56.1	58.5	42.9	53.9	58.7	44.7	55.4	58.5	45.9	51.3	55.6	41.0	**54**	NA
14-Jun-13	10:25	54.8	56.2	42.6	52.6	54.9	41.3	55.9	57.5	43.0	53.4	55.6	42.8	54.0	55.9	43.2	53.6	55.9	42.3	**54**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	12:18	64.0	66.0	45.1	56.5	57.6	44.6	55.0	57.3	45.5										NA	**60**
17-Jun-13	13:47	56.3	58.4	53.1	64.9	69.7	53.4	60.6	62.9	53.0	66.6	66.3	53.9	70.8	72.3	55.1	58.4	60.8	52.7	**66**	NA
18-Jun-13	11:42	64.7	63.8	52.2	59.9	62.6	50.7	58.4	60.3	51.1	60.1	62.3	62.7	65.7	62.7	50.6	67.8	65.9	51.6	**64**	NA
19-Jun-13	13:26	55.0	56.8	48.8	62.0	61.3	49.2	57.0	62.8	51.0	57.5	61.8	49.5	55.9	59.5	48.7	57.2	60.8	49.3	**58**	NA
20-Jun-13	11:20	60.2	58.5	51.0	53.0	54.5	51.0	53.0	54.0	50.5	54.1	55.0	50.5	61.0	59.0	51.0	57.3	57.0	51.0	**58**	NA
21-Jun-13	12:39	58.0	62.0	47.7	61.9	60.7	48.4	54.1	56.2	48.3	54.1	55.7	49.0	52.6	55.2	47.9	60.4	59.5	48.4	**58**	NA
22-Jun-13	14:09	56.4	58.0	45.5	58.8	59.0	45.0	54.7	56.5	46.5	59.6	60.0	47.5	57.5	58.5	48.5	55.5	57.5	47.0	**57**	NA
*23-Jun-13	11:23	48.9	50.0	43.0	47.0	49.0	44.5	47.8	49.5	44.5										NA	**48**
24-Jun-13	13:21	61.4	60.0	49.5	59.5	61.5	47.5	56.8	57.5	46.0	59.6	59.5	45.5	57.2	58.5	49.0	60.4	61.0	48.5	**59**	NA
25-Jun-13	11:40	65.8	71.0	44.6	60.4	54.8	43.5	54.2	56.5	41.6	65.6	67.1	43.2	57.0	61.1	45.6	60.1	63.0	45.8	**62**	NA
26-Jun-13	10:20	62.2	62.9	57.4	62.6	64.4	56.3	65.8	67.7	56.5	65.6	65.9	56.7	58.7	62.3	57.4	66.8	69.4	55.5	**64**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM5

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	11:26	53.4	56.5	47.0	54.2	57.8	46.2	55.9	59.2	48.8	56.5	59.4	42.7	55.2	59.3	44.3	56.7	59.8	43.9	**55**	NA
14-Jun-13	9:40	54.7	57.2	48.2	52.9	56.3	46.3	52.3	56.0	46.2	53.1	56.8	46.7	53.8	57.0	46.9	54.3	57.2	47.8	**54**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	11:40	57.0	60.2	50.2	58.0	63.4	44.4	53.6	56.6	42.1										NA	**57**
17-Jun-13	13:18	54.9	58.5	44.0	60.0	63.0	46.5	59.3	62.5	50.5	58.7	62.5	49.0	57.7	61.0	43.5	58.2	62.0	44.0	**58**	NA
18-Jun-13	11:47	56.6	60.5	41.5	55.3	59.0	44.0	56.4	60.5	43.5	55.3	59.0	44.5	56.7	60.5	46.5	57.7	61.0	48.0	**56**	NA
19-Jun-13	13:31	57.6	59.5	46.0	55.4	59.5	45.5	55.5	59.0	48.0	54.1	58.0	46.0	53.5	57.5	45.0	53.5	57.5	45.0	**55**	NA
20-Jun-13	12:20	58.8	63.0	47.0	57.9	62.0	46.5	55.6	58.5	48.0	55.0	59.0	44.5	51.8	55.5	41.5	47.0	48.0	46.5	**56**	NA
21-Jun-13	13:15	57.8	61.0	45.0	56.4	59.5	44.5	55.2	59.5	44.5	56.6	60.0	46.5	57.8	61.5	49.0	56.4	60.5	44.5	**57**	NA
22-Jun-13	14:55	57.2	61.0	47.5	57.1	61.0	47.0	56.4	59.0	46.0	56.0	58.5	46.0	55.7	58.5	45.5	54.8	58.0	44.0	**56**	NA
*23-Jun-13	11:12	58.3	60.5	51.5	56.1	57.5	51.0	54.9	56.0	50.0										NA	**57**
24-Jun-13	15:35	57.0	59.5	44.5	56.1	59.5	44.5	55.9	59.0	44.0	59.7	62.5	46.5	55.4	59.0	44.5	55.0	58.5	44.0	**57**	NA
25-Jun-13	12:39	59.4	60.3	46.2	54.5	54.2	40.1	55.1	58.6	49.8	61.9	67.0	41.1	61.9	66.5	42.7	52.8	58.2	42.9	**59**	NA
26-Jun-13	14:15	54.3	54.5	45.0	57.7	60.0	53.4	59.6	60.4	45.6	53.9	61.9	44.0	54.7	56.8	47.0	55.9	60.6	46.6	**57**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM6

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	11:27	63.3	68.0	50.0	61.1	65.0	50.0	62.6	66.5	54.0	61.3	64.5	55.0	59.9	63.5	52.0	60.3	64.0	52.5	**62**	NA
14-Jun-13	9:47	62.6	67.5	50.0	61.4	66.5	50.0	64.7	68.5	52.0	62.8	68.0	50.5	63.6	68.0	51.5	64.2	68.5	52.5	**63**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	11:43	52.6	56.0	43.0	51.7	55.5	41.0	52.1	56.0	44.0										NA	**52**
17-Jun-13	13:59	58.9	61.5	51.0	57.5	60.5	45.5	57.5	60.5	48.5	62.9	66.5	53.0	60.4	64.0	52.5	62.6	66.0	54.5	**61**	NA
18-Jun-13	13:45	62.8	66.5	56.5	63.4	67.0	55.5	61.3	65.0	53.0	62.7	66.0	54.5	61.8	65.5	54.5	62.8	66.5	54.0	**63**	NA
19-Jun-13	13:28	61.1	64.5	52.0	61.1	64.5	53.5	60.3	63.5	50.5	61.0	65.0	52.0	59.8	64.0	49.0	60.5	65.0	51.5	**61**	NA
20-Jun-13	12:10	60.3	64.1	47.9	62.8	66.5	51.8	63.4	67.6	50.0	61.7	65.0	52.3	61.0	64.7	50.4	60.8	63.7	50.8	**62**	NA
21-Jun-13	13:20	62.4	66.1	51.8	66.1	69.3	53.5	61.9	65.2	52.9	65.4	69.3	52.3	65.7	70.9	55.5	64.6	67.0	53.4	**65**	NA
22-Jun-13	11:22	61.1	65.5	50.0	62.4	66.0	50.5	60.4	64.5	50.5	61.4	65.5	51.0	63.7	66.0	53.5	62.9	65.5	52.5	**62**	NA
*23-Jun-13	14:43	52.2	55.0	47.5	50.0	53.5	41.0	49.1	52.5	40.5										NA	**51**
24-Jun-13	14:17	61.0	64.0	51.5	61.6	64.5	51.5	60.6	64.0	50.0	62.4	65.5	52.5	61.7	64.5	51.5	60.8	63.5	50.5	**61**	NA
25-Jun-13	12:42	57.6	61.6	48.3	58.8	63.4	41.1	51.1	54.2	42.9	60.9	63.9	44.7	55.8	59.3	45.4	58.1	61.4	42.9	**58**	NA
26-Jun-13	14:57	58.9	61.8	55.0	58.5	58.7	46.9	58.4	58.8	50.2	61.2	63.7	53.2	63.6	65.9	53.0	58.6	59.5	56.1	**60**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM7

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
27-Jun-13	12:59	51.2	52.6	39.9	50.3	52.8	40.8	54.1	50.8	39.7	57.2	59.8	39.9	61.1	61.0	43.6	52.5	54.8	42.5	**56**	NA
28-Jun-13	15:30	55.4	59.2	43.6	56.2	55.5	44.7	46.3	49.8	45.0	55.0	59.1	42.1	4.3	58.2	48.7	55.5	58.2	49.1	**54**	NA
29-Jun-13	13:45	63.8	73.1	49.7	61.1	67.2	44.7	56.0	57.9	48.3	61.4	61.9	54.9	59.6	58.6	54.0	53.1	56.9	52.8	**60**	NA
*30-Jun-13	14:30	61.3	63.0	55.0	61.4	63.0	55.5	61.3	63.0	55.5										NA	**61**
*1-Jul-13	11:31	44.8	48.0	39.5	41.2	42.0	39.0	40.1	40.5	39.0										NA	**43**
2-Jul-13	13:54	55.7	54.5	46.0	54.5	55.0	47.0	52.6	54.8	47.0	57.3	59.5	47.0	55.1	58.0	46.0	53.8	55.5	45.5	**55**	NA
3-Jul-13	14:50	54.2	56.4	40.0	52.8	55.8	41.9	53.0	56.4	41.2	52.2	52.5	38.5	61.1	65.7	36.9	62.1	59.0	39.5	**58**	NA
4-Jul-13	16:22	53.7	55.8	36.9	47.1	48.5	33.7	44.1	43.3	33.6	49.3	50.6	34.6	37.5	39.7	34.1	50.2	48.3	34.1	**49**	NA
5-Jul-13	16:20	53.3	56.6	41.1	56.9	60.9	42.5	60.0	63.4	43.8	52.1	57.1	41.9	53.5	57.4	40.3	51.8	56.5	40.1	**56**	NA
6-Jul-13	16:00	54.0	56.3	39.4	69.4	71.8	40.7	54.5	54.6	40.0	57.0	59.1	36.8	45.2	44.0	37.3	56.4	55.6	37.2	**62**	NA
*7-Jul-13	17:00	59.7	61.2	52.6	57.7	59.2	49.6	57.6	63.6	52.1										NA	58
8-Jul-13	15:41	66.3	70.1	55.8	63.9	63.8	62.2	63.1	63.9	62.2	60.4	63.9	43.6	58.4	62.6	42.2	53.6	57.3	41.2	**63**	NA
9-Jul-13	12:00	54.2	63.5	44.0	51.3	54.5	42.5	59.4	50.5	44.0	50.0	54.5	42.0	54.6	57.5	41.5	50.7	51.5	42.0	**55**	NA
10-Jul-13	12:24	60.3	60.8	33.6	58.3	54.2	34.4	62.3	55.3	42.1	53.7	54.1	34.1	54.9	54.2	33.6	58.6	44.5	38.6	**59**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM8

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	15:50	60.7	65.6	51.3	58.1	60.1	47.9	57.3	61.9	51.4	65.9	67.1	54.5	57.1	59.9	53.3	57.0	61.2	51.8	**61**	NA
14-Jun-13	10:40	62.8	64.0	53.7	59.4	65.1	47.4	61.4	67.5	47.0	72.4	74.4	48.9	62.8	64.9	49.6	64.1	65.7	61.8	**66**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	13:08	56.4	54.7	49.2	62.5	68.1	48.7	60.3	59.0	50.3										NA	**60**
17-Jun-13	16:19	67.1	71.4	54.1	63.9	68.7	52.3	63.4	68.0	53.8	65.0	69.9	50.8	64.7	70.1	51.5	59.1	63.2	52.8	**64**	NA
18-Jun-13	15:30	56.3	57.4	54.2	57.5	57.4	54.5	56.4	57.6	56.0	58.8	59.2	56.0	59.2	61.3	54.6	58.9	60.1	54.4	**58**	NA
19-Jun-13	15:08	54.6	55.6	45.7	65.2	69.9	48.4	63.4	68.5	47.8	61.9	63.5	47.8	65.7	70.6	49.1	63.1	68.7	47.7	**63**	NA
20-Jun-13	10:45	67.4	69.5	62.5	64.6	68.4	61.0	66.8	69.5	61.3	66.5	71.2	63.3	68.1	73.7	64.1	67.3	69.1	66.0	**67**	NA
21-Jun-13	14:18	60.8	62.2	47.8	61.7	67.5	46.4	62.3	66.8	46.6	62.4	69.1	46.9	64.7	70.6	46.3	64.1	70.6	46.7	**63**	NA
22-Jun-13	15:51	59.2	63.5	52.5	60.9	64.0	51.0	60.1	64.0	52.5	61.4	65.0	52.5	62.6	65.5	53.0	60.8	64.5	52.0	**61**	NA
*23-Jun-13	12:36	59.6	63.4	48.6	56.9	63.4	46.3	57.2	60.8	46.3										NA	**58**
24-Jun-13	17:26	59.8	62.5	49.5	59.1	62.0	50.5	60.7	63.5	50.0	61.5	64.0	50.0	60.4	63.5	49.5	59.3	61.5	49.0	**60**	NA
25-Jun-13	13:30	53.7	59.4	44.7	55.4	57.9	52.8	54.6	55.2	53.7	54.9	62.2	52.5	54.6	54.1	51.0	50.8	51.6	50.3	**54**	NA
26-Jun-13	12:00	54.2	57.4	43.4	51.3	56.0	43.5	59.4	63.8	46.5	50.0	53.0	45.5	54.6	58.6	46.6	50.7	56.1	44.9	**55**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM9

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	14:59	63.8	66.9	56.5	62.5	65.8	57.1	60.7	64.0	55.5	61.5	64.8	55.5	58.0	61.3	51.6	58.9	62.4	50.8	**61**	NA
14-Jun-13	9:00	57.9	59.7	54.4	57.4	59.5	53.4	57.3	60.8	53.0	58.1	60.4	53.6	60.7	61.7	53.0	64.0	66.5	56.0	**60**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	13:40	59.0	62.4	47.2	54.0	57.6	48.7	54.2	58.3	48.5										NA	**56**
17-Jun-13	15:45	53.1	57.0	48.0	60.3	65.0	48.5	70.3	72.5	58.0	59.4	60.5	56.5	58.9	60.0	56.5	61.6	62.5	55.5	**64**	NA
18-Jun-13	10:15	60.5	61.1	47.4	63.2	67.7	47.4	63.7	67.5	47.9	66.4	68.5	49.1	62.4	66.0	47.5	62.4	68.3	47.8	**63**	NA
19-Jun-13	15:06	61.1	65.0	53.0	58.4	61.5	53.5	57.8	60.0	53.5	59.1	63.0	53.0	58.7	61.5	53.5	60.1	62.0	54.0	**59**	NA
20-Jun-13	9:50	77.3	79.8	70.6	74.4	79.5	67.1	74.0	78.4	66.6	76.6	79.3	67.5	75.1	76.9	65.8	76.3	79.0	67.7	**76**	NA
21-Jun-13	14:52	62.9	65.0	57.5	58.8	62.0	55.0	57.2	59.5	54.5	58.4	60.0	54.5	58.3	61.0	55.5	58.7	60.5	56.0	**59**	NA
22-Jun-13	16:48	65.2	67.5	55.0	63.2	65.5	53.5	63.8	66.0	53.0	62.7	65.5	52.5	62.3	65.0	52.5	61.4	64.0	52.0	**63**	NA
*23-Jun-13	12:40	48.9	52.0	43.1	73.6	76.5	49.0	62.6	63.0	58.5										NA	**69**
24-Jun-13	11:04	67.2	69.5	58.5	65.3	68.0	57.0	65.8	68.0	57.5	64.0	67.5	56.5	64.4	67.5	56.5	63.5	67.0	55.5	**65**	NA
25-Jun-13	14:07	62.4	69.0	51.8	61.1	65.5	49.6	67.4	68.9	48.6	60.3	63.2	50.2	61.8	62.0	50.0	62.3	66.8	53.8	**63**	NA
26-Jun-13	12:05	67.8	68.8	53.9	69.4	75.2	53.6	66.8	68.5	55.0	62.2	68.7	55.5	62.7	68.8	53.5	68.8	76.6	53.6	**67**	NA

Remarks: (*) Public Holiday or Sunday

Noise Measurement Results (dB) of NM10

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	Leq15min
13-Jun-13	14:13	62.4	65.6	59.9	61.3	62.3	59.6	61.1	62.4	59.6	61.6	62.7	59.5	61.6	62.4	58.7	61.5	62.7	59.9	**62**	NA
14-Jun-13	10:00	61.0	63.1	58.7	60.6	62.6	58.3	61.6	62.3	58.3	61.7	63.1	60.0	61.4	62.9	59.2	60.8	62.0	58.7	**61**	NA
15-Jun-13	**Rainy Day**																			NA	NA
*16-Jun-13	13:06	60.1	61.0	56.0	58.9	60.0	56.5	59.3	59.5	56.5										NA	**59**
17-Jun-13	16:07	63.4	64.5	61.0	64.4	64.0	61.0	63.9	65.0	62.0	63.4	64.5	61.5	64.6	66.5	62.0	65.1	67.5	62.0	**64**	NA
18-Jun-13	9:00	55.5	55.9	51.6	56.6	59.2	52.5	56.9	59.0	52.2	55.7	59.8	52.8	54.7	58.9	51.8	55.1	55.9	51.4	**56**	NA
19-Jun-13	15:30	61.7	63.5	59.0	60.7	62.5	57.5	60.7	62.0	58.0	60.5	62.0	57.5	60.7	62.5	57.5	61.7	62.5	58.5	**61**	NA
20-Jun-13	9:00	68.2	69.5	65.6	70.0	72.6	66.0	69.4	71.3	65.8	70.4	70.7	66.4	69.8	70.7	66.5	72.7	72.9	67.1	**70**	NA
21-Jun-13	14:07	62.4	63.0	59.0	62.9	64.5	59.0	61.2	61.5	59.0	66.7	68.5	58.0	60.7	62.5	56.5	58.8	60.0	57.0	**63**	NA
22-Jun-13	17:34	63.7	65.0	57.5	62.3	64.5	56.5	61.6	63.5	56.0	64.9	66.0	59.5	67.1	69.5	60.5	66.6	69.5	60.0	**65**	NA
*23-Jun-13	12:06	51.8	55.0	46.0	52.9	54.0	51.5	52.9	53.5	51.5										NA	**53**
24-Jun-13	11:49	69.2	71.0	61.0	62.7	65.5	58.5	64.5	67.0	60.0	59.2	63.5	56.5	60.5	63.5	56.5	68.2	70.5	60.5	**66**	NA
25-Jun-13	14:11	58.5	62.1	49.7	60.9	65.0	48.9	63.4	66.5	55.3	62.6	65.4	48.3	63.3	67.4	48.3	59.1	60.5	47.9	**62**	NA
26-Jun-13	12:47	64.0	66.2	56.8	63.5	65.8	55.6	60.1	58.9	56.3	60.3	62.1	55.6	58.2	58.8	56.1	61.9	65.8	54.2	**62**	NA

Remarks: (*) Public Holiday or Sunday

Water Quality

Date	14-Jun-13															
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	11:35	0.25	25.0	25.05	4.24	4.28	62.2	62.85	16.20	16.30	7.7	7.70	35	34.5
			25.1		4.31		63.5		16.40		7.7		34	
WM1-Control	11:22	0.45	25.0	25.00	4.68	4.64	68.7	68.45	6.88	6.90	7.6	7.60	7	7.5
			25.0		4.59		68.2		6.91		7.6		8	
WM2A	12:00	0.20	27.6	27.55	4.48	4.51	68.5	68.65	4.29	4.31	7.7	7.65	8	7.5
			27.5		4.53		68.8		4.33		7.6		7	
WM2A-Control	14:30	0.25	25.3	25.30	5.64	5.62	78.9	78.35	57.50	56.30	7.6	7.65	84	86.0
			25.3		5.59		77.8		55.10		7.7		88	
WM2B	14:45	0.13	25.6	25.60	5.03	4.96	74.7	73.40	50.20	49.35	7.8	7.75	72	72.5
			25.6		4.89		72.1		48.50		7.7		73	
WM2B-Control	15:00	0.12	25.2	25.15	4.71	4.68	69.5	68.60	62.00	60.30	7.6	7.60	101	99.5
			25.1		4.65		67.7		58.60		7.6		98	
WM3	15:10	0.18	25.1	25.10	4.05	4.08	59.0	59.70	26.50	26.95	7.7	7.70	46	46.0
			25.1		4.11		60.4		27.40		7.7		46	
WM3-Control	15:21	0.11	25.5	25.45	3.70	3.66	54.5	53.30	44.50	43.60	7.6	7.65	93	91.5
			25.4		3.62		52.1		42.70		7.7		90	
WM4	16:11	0.18	25.4	25.35	4.53	4.62	58.4	59.05	7.31	7.20	8.0	8.00	13	12.0
			25.3		4.71		59.7		7.08		8.0		11	
WM4-Control A	16:00	0.19	25.1	25.15	4.87	4.78	61.7	60.50	41.70	40.95	8.4	8.40	63	62.0
			25.2		4.69		59.3		40.20		8.4		61	
WM4-Control B	16:11	0.18	25.4	25.40	4.53	4.62	58.4	59.65	63.10	61.45	7.9	7.85	87	89.0
			25.4		4.71		60.9		59.80		7.8		91	

Date	19-Jun-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	12:54	0.27	32.2	32.15	4.14	4.18	68.7	69.40	19.00	19.15	8.4	8.35	19	20.0
			32.1		4.22		70.1		19.30		8.3		21	
WM1-Control	13:00	0.38	30.1	30.10	4.33	4.27	71.4	70.55	7.71	7.65	7.9	7.95	5	5.5
			30.1		4.20		69.7		7.59		8.0		6	
WM2A	12:42	0.20	31.0	31.00	3.30	3.34	55.0	55.65	9.17	9.25	7.7	7.70	4	4.5
			31.0		3.38		56.3		9.32		7.7		5	
WM2A-Control	12:15	0.15	26.5	26.60	5.48	5.40	82.9	81.55	7.34	7.41	7.7	7.75	5	4.5
			26.7		5.31		80.2		7.47		7.8		4	
WM2B	12:07	0.03	33.3	33.40	4.64	4.57	78.2	76.90	9.91	10.01	7.9	7.90	7	6.5
			33.5		4.49		75.6		10.10		7.9		6	
WM2B-Control	12:00	0.03	31.2	31.15	4.12	4.16	67.2	67.65	0.93	0.96	7.9	7.90	8	7.5
			31.1		4.20		68.1		0.98		7.9		7	
WM3	11:35	0.30	30.2	30.20	4.23	4.27	68.2	68.85	14.00	14.10	7.8	7.80	12	12.0
			30.2		4.31		69.5		14.20		7.8		12	
WM3-Control	11:48	0.05	29.8	29.85	4.09	4.12	65.2	65.55	11.10	11.20	8.2	8.15	8	8.5
			29.9		4.15		65.9		11.30		8.1		9	
WM4	10:35	0.10	30.1	30.05	4.22	4.20	67.7	67.45	26.00	26.10	7.7	7.75	19	19.5
			30.0		4.17		67.2		26.20		7.8		20	
WM4-Control A	10:48	0.06	28.6	28.65	4.79	4.82	75.2	75.65	21.90	21.75	7.8	7.80	14	13.0
			28.7		4.85		76.1		21.60		7.8		12	
WM4-Control B	11:05	0.05	33.5	33.45	4.68	4.73	79.2	79.85	30.30	30.15	7.8	7.80	21	20.5
			33.4		4.77		80.5		30.00		7.8		20	

Date	17-Jun-13															
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	11:15	0.20	27.6	27.65	4.33	4.29	65.5	64.70	14.30	14.20	7.6	7.65	38	38.5
			27.7		4.24		63.9		14.10		7.7		39	
WM1-Control	11:03	0.50	28.3	28.25	3.64	3.70	56.7	57.30	5.83	5.92	7.7	7.70	19	18.5
			28.2		3.75		57.9		6.01		7.7		18	
WM2A	12:00	0.18	28.4	28.40	4.11	4.07	63.8	62.75	4.73	4.66	7.7	7.65	19	18.0
			28.4		4.02		61.7		4.59		7.6		17	
WM2A-Control	15:10	0.33	27.2	27.25	4.13	4.05	63.1	62.55	2.34	2.38	7.6	7.65	10	10.0
			27.3		3.97		62.0		2.41		7.7		10	
WM2B	14:15	0.10	24.8	24.90	4.97	4.90	73.5	72.65	2.12	2.16	7.7	7.70	7	7.5
			25.0		4.83		71.8		2.19		7.7		8	
WM2B-Control	14:20	0.10	24.3	24.35	5.43	5.47	79.1	80.15	5.19	5.25	8.0	7.95	6	6.5
			24.4		5.51		81.2		5.30		7.9		7	
WM3	14:35	0.20	26.1	26.05	3.73	3.77	55.9	56.50	3.20	3.27	8.0	7.95	7	7.0
			26.0		3.80		57.1		3.34		7.9		7	
WM3-Control	14:50	0.05	27.6	27.55	3.36	3.39	51.5	52.10	6.45	6.38	8.1	8.05	22	22.5
			27.5		3.41		52.7		6.31		8.0		23	
WM4	15:35	0.40	27.0	27.05	4.11	4.07	62.7	62.25	13.70	13.90	7.7	7.75	23	23.5
			27.1		4.03		61.8		14.10		7.8		24	
WM4-Control A	15:45	0.18	26.1	26.15	4.05	4.08	64.2	64.65	2.45	2.48	8.3	8.25	6	6.5
			26.2		4.11		65.1		2.51		8.2		7	
WM4-Control B	16:00	0.10	27.3	27.30	4.31	4.28	67.2	66.95	8.93	9.00	8.3	8.25	7	7.5
			27.3		4.24		66.7		9.07		8.2		8	

Date	21-Jun-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	10:55	0.13	28.0	28.05	4.79	4.73	74.1	73.80	11.80	11.50	8.3	8.30	24	23.50
			28.1		4.66		73.5		11.20		8.3		23	
WM1-Control	10:45	0.14	30.3	30.25	4.45	4.48	71.8	72.00	12.40	12.30	7.8	7.85	26	25.50
			30.2		4.51		72.2		12.20		7.9		25	
WM2A	11:20	0.20	30.3	30.30	4.10	4.14	65.4	65.75	2.97	3.00	7.5	7.55	5	5.50
			30.3		4.18		66.1		3.03		7.6		6	
WM2A-Control	11:45	0.27	30.3	30.30	3.82	3.86	61.2	61.45	3.14	3.13	8.3	8.25	10	10.00
			30.3		3.90		61.7		3.11		8.2		10	
WM2B	12:39	0.05	31.0	31.05	4.93	4.88	80.2	79.85	2.79	2.82	7.7	7.75	3	2.50
			31.1		4.82		79.5		2.84		7.8		2	
WM2B-Control	12:22	0.05	25.9	25.90	4.80	4.82	71.7	71.80	2.13	2.16	7.9	7.85	3	3.00
			25.9		4.84		71.9		2.19		7.8		3	
WM3	13:06	0.40	31.0	31.05	4.15	4.19	67.4	67.85	2.36	2.39	7.8	7.80	6	6.00
			31.1		4.22		68.3		2.41		7.8		6	
WM3-Control	12:55	0.05	30.0	29.95	3.98	4.02	63.6	63.80	4.27	4.23	7.5	7.55	6	5.50
			29.9		4.05		64.0		4.19		7.6		5	
WM4	13:47	0.41	33.7	33.60	4.68	4.65	78.2	77.95	39.90	39.20	7.7	7.75	46	47.00
			33.5		4.61		77.7		38.50		7.8		48	
WM4-Control A	14:16	0.26	36.3	36.40	4.24	4.28	74.8	75.20	2.49	2.51	8.0	7.95	4	5.00
			36.5		4.32		75.6		2.53		7.9		6	
WM4-Control B	14:03	0.23	24.6	24.60	5.23	5.20	90.1	89.95	9.72	9.68	7.6	7.65	17	17.00
			24.6		5.17		89.8		9.64		7.7		17	

Date	24-Jun-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	11:35	0.25	25.0	25.05	4.71	4.76	68.9	69.00	324.00	321.00	7.7	7.65	275	270.0
			25.1		4.80		69.1		318.00		7.6		265	
WM1-Control	11:26	0.45	24.8	24.80	4.79	4.76	69.9	69.20	692.00	689.50	7.6	7.65	457	447.0
			24.8		4.72		68.5		687.00		7.7		437	
WM2A	10:50	0.50	24.2	24.25	5.41	5.38	78.2	78.05	62.10	61.50	7.7	7.70	48	46.5
			24.3		5.34		77.9		60.90		7.7		45	
WM2A-Control	12:10	0.50	24.5	24.50	5.49	5.52	79.6	79.75	68.90	68.70	7.9	7.85	44	44.5
			24.5		5.55		79.9		68.50		7.8		45	
WM2B	12:30	0.19	25.0	25.05	6.76	6.72	99.8	99.65	53.50	53.35	7.7	7.75	26	27.5
			25.1		6.67		99.5		53.20		7.8		29	
WM2B-Control	12:39	0.14	24.7	24.70	6.96	6.91	102.1	101.80	44.20	44.05	7.5	7.55	28	28.0
			24.7		6.85		101.5		43.90		7.6		28	
WM3	13:16	0.53	25.8	25.80	6.52	6.50	97.2	97.00	94.40	94.05	7.6	7.60	45	44.5
			25.8		6.48		96.8		93.70		7.6		44	
WM3-Control	12:51	0.20	25.6	25.65	5.92	5.88	87.6	87.35	78.20	77.85	7.3	7.35	33	34.5
			25.7		5.84		87.1		77.50		7.4		36	
WM4	14:56	0.54	26.0	26.05	7.07	7.01	105.4	104.65	53.20	53.65	7.7	7.70	32	32.0
			26.1		6.95		103.9		54.10		7.7		32	
WM4-Control A	15:05	0.40	25.2	25.20	7.25	7.22	106.9	106.45	88.20	88.75	7.4	7.40	49	49.5
			25.2		7.18		106.0		89.30		7.4		50	
WM4-Control B	15:15	0.22	27.7	27.65	5.13	5.16	78.6	78.90	147.00	146.50	7.4	7.45	189	188.0
			27.6		5.19		79.2		146.00		7.5		187	

Date	26-Jun-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	13:00	0.30	28.2	28.20	6.56	6.53	101.7	101.10	11.00	11.15	7.4	7.45	12	12.0
			28.2		6.49		100.5		11.30		7.5		12	
WM1-Control	13:10	0.38	28.2	28.15	6.40	6.43	99.0	99.55	9.99	10.05	7.4	7.40	8	8.0
			28.1		6.45		100.1		10.10		7.4		8	
WM2A	13:26	0.16	28.2	28.15	6.02	6.07	92.6	93.05	10.70	10.55	7.2	7.20	7	7.0
			28.1		6.11		93.5		10.40		7.2		7	
WM2A-Control	13:48	0.20	26.5	26.55	5.58	5.62	87.4	87.70	4.44	4.48	7.1	7.10	5	4.5
			26.6		5.65		88.0		4.51		7.1		4	
WM2B	14:07	0.05	28.7	28.70	6.41	6.47	100.4	100.75	12.60	12.50	7.3	7.25	9	9.5
			28.7		6.52		101.1		12.40		7.2		10	
WM2B-Control	14:20	0.05	24.2	24.25	4.46	4.50	64.6	64.90	3.03	3.00	7.2	7.20	3	2.5
			24.3		4.53		65.2		2.97		7.2		2	
WM3	14:35	0.08	31.6	31.55	5.98	5.92	97.6	97.25	2.57	2.64	6.9	6.95	4	4.0
			31.5		5.85		96.9		2.71		7.0		4	
WM3-Control	15:15	0.05	26.8	26.80	4.96	4.89	74.7	74.45	3.26	3.30	7.2	7.20	4	4.0
			26.8		4.81		74.2		3.33		7.2		4	
WM4	11:55	0.80	28.5	28.55	6.63	6.60	103.0	102.70	28.00	27.90	7.5	7.45	20	19.5
			28.6		6.57		102.4		27.80		7.4		19	
WM4-Control A	11:42	0.10	26.9	26.95	6.67	6.60	101.8	101.15	7.50	7.56	8.2	8.15	10	9.5
			27.0		6.53		100.5		7.62		8.1		9	
WM4-Control B	11:22	0.05	28.2	28.20	6.67	6.61	103.2	102.90	49.20	49.30	7.9	7.90	56	55.0
			28.2		6.55		102.6		49.40		7.9		54	

Date	29-Jun-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	15:45	0.20	30.0	29.95	6.43	6.49	102.6	103.05	17.00	17.10	7.0	7.00	18	18.5
			29.9		6.55		103.5		17.20		7.0		19	
WM1-Control	15:36	0.80	30.9	30.90	6.69	6.66	107.5	106.95	9.09	9.02	7.0	7.05	7	7.5
			30.9		6.62		106.4		8.95		7.1		8	
WM2A	11:02	0.30	26.9	26.80	7.91	7.85	105.8	105.25	2.40	2.39	7.4	7.45	3	3.5
			26.7		7.78		104.7		2.37		7.5		4	
WM2A-Control	11:35	0.37	27.3	27.35	6.43	6.51	98.6	99.05	34.90	34.50	7.1	7.05	72	75.0
			27.4		6.59		99.5		34.10		7.0		78	
WM2B	11:55	0.05	30.2	30.15	7.92	7.88	125.6	123.85	9.35	9.44	7.6	7.55	10	11.0
			30.1		7.84		122.1		9.52		7.5		12	
WM2B-Control	12:09	0.04	25.6	25.65	5.87	5.92	86.2	87.30	0.42	0.45	7.6	7.60	<2	<2.0
			25.7		5.96		88.4		0.48		7.6		<2	
WM3	12:26	0.02	29.6	29.60	6.97	6.91	110.2	109.85	1.42	1.41	7.1	7.05	4	3.5
			29.6		6.84		109.5		1.39		7.0		3	
WM3-Control	13:50	0.05	27.2	27.25	5.55	5.63	84.0	85.05	4.79	4.74	6.9	6.95	2	3.0
			27.3		5.71		86.1		4.68		7.0		4	
WM4	13:28	0.05	32.1	32.15	7.25	7.22	119.5	118.60	10.20	10.15	7.1	7.10	14	14.0
			32.2		7.18		117.7		10.10		7.1		14	
WM4-Control A	13:45	0.07	29.3	29.25	7.09	7.01	110.9	110.05	1.26	1.29	7.4	7.45	3	3.5
			29.2		6.93		109.2		1.31		7.5		4	
WM4-Control B	13:55	0.03	34.8	34.75	5.51	5.54	94.3	94.70	14.00	14.10	7.1	7.15	15	16.5
			34.7		5.57		95.1		14.20		7.2		18	

Date	2-Jul-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	10:40	0.32	30.0	30.10	5.63	5.61	90.2	90.10	26.60	26.45	6.9	6.95	32	31.5
			30.2		5.59		90.0		26.30		7.0		31	
WM1-Control	10:10	0.93	29.8	29.85	4.87	4.91	81.9	82.10	15.40	15.35	7.1	7.10	10	9.5
			29.9		4.95		82.3		15.30		7.1		9	
WM2A	14:45	0.15	29.5	29.50	6.40	6.35	97.5	97.30	11.50	11.40	6.8	6.85	8	7.5
			29.5		6.29		97.1		11.30		6.9		7	
WM2A-Control	11:45	0.30	26.5	28.05	6.41	6.37	100.7	100.30	20.70	20.75	6.8	6.85	5	5.5
			29.6		6.33		99.9		20.80		6.9		6	
WM2B	15:10	0.10	29.1	29.10	7.26	7.22	114.1	113.30	0.18	0.18	7.0	7.00	4	3.5
			29.1		7.17		112.5		0.17		7.0		3	
WM2B-Control	15:20	0.10	29.5	29.55	6.17	6.11	95.2	95.00	1.98	2.00	6.9	6.95	<2	<2.0
			29.6		6.05		94.8		2.01		7.0		<2	
WM3	16:05	0.25	27.8	27.75	7.31	7.33	111.4	111.55	0.88	0.92	6.7	6.75	2	2.0
			27.7		7.34		111.7		0.95		6.8		2	
WM3-Control	15:45	0.05	27.1	27.15	5.43	5.39	84.2	84.00	2.88	2.91	6.6	6.65	2	2.5
			27.2		5.35		83.8		2.94		6.7		3	
WM4	12:20	0.42	29.5	29.55	7.23	7.25	114.8	114.80	30.30	30.20	7.1	7.05	18	18.5
			29.6		7.27		114.8		30.10		7.0		19	
WM4-Control A	12:40	0.27	28.9	28.95	6.64	6.62	104.7	104.60	9.63	9.61	7.3	7.30	9	9.0
			29.0		6.60		104.5		9.58		7.3		9	
WM4-Control B	12:55	0.24	29.7	29.65	6.07	6.03	96.5	96.35	22.60	22.50	7.1	7.15	16	15.5
			29.6		5.98		96.2		22.40		7.2		15	

Date	4-Jul-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	14:32	0.27	29.8	29.85	4.75	4.72	62.3	62.00	17.60	17.45	7.1	7.10	16	16.0
			29.9		4.69		61.7		17.30		7.1		16	
WM1-Control	14:22	0.30	28.9	28.95	5.80	5.83	74.9	75.00	11.30	11.35	7.1	7.15	4	4.0
			29.0		5.85		75.1		11.40		7.2		4	
WM2A	14:55	0.23	29.6	29.60	5.88	5.94	76.9	76.95	9.69	9.63	7.0	7.05	4	4.5
			29.6		6.00		77.0		9.57		7.1		5	
WM2A-Control	11:32	0.40	30.1	30.05	5.08	5.10	66.8	66.80	13.70	13.60	7.1	7.05	4	4.0
			30.0		5.11		66.8		13.50		7.0		4	
WM2B	10:51	0.05	30.4	30.35	7.72	7.76	103.2	103.45	1.15	1.12	7.3	7.30	2	<2.0
			30.3		7.80		103.7		1.09		7.3		<2	
WM2B-Control	11:00	0.03	27.6	27.65	7.83	7.81	105.3	104.95	0.83	0.87	7.6	7.65	<2	<2.0
			27.7		7.78		104.6		0.90		7.7		<2	
WM3	11:13	0.37	30.1	30.05	5.76	5.81	75.7	75.90	6.56	6.64	7.6	7.60	6	5.5
			30.0		5.85		76.1		6.71		7.6		5	
WM3-Control	10:40	0.05	27.4	27.45	6.88	6.84	86.6	87.30	12.30	12.25	7.8	7.80	4	4.5
			27.5		6.79		88.0		12.20		7.8		5	
WM4	12:25	0.40	29.8	29.80	6.70	6.73	87.1	87.10	18.40	18.30	7.3	7.35	21	20.5
			29.8		6.75		87.1		18.20		7.4		20	
WM4-Control A	12:32	0.13	29.4	29.45	5.83	5.88	76.7	76.75	6.56	6.65	7.6	7.55	10	8.0
			29.5		5.92		76.8		6.73		7.5		6	
WM4-Control B	12:40	0.22	30.6	30.55	6.16	6.12	81.8	81.70	11.10	11.00	7.3	7.35	14	13.5
			30.5		6.07		81.6		10.90		7.4		13	

Date	6-Jul-13															
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	12:50	0.37	27.3	27.35	5.56	5.54	69.6	69.60	17.90	17.80	6.7	6.75	21	21.0
			27.4		5.51		69.6		17.70		6.8		21	
WM1-Control	12:45	0.22	27.1	27.10	5.91	5.97	73.8	73.95	17.30	17.25	6.7	6.70	32	30.0
			27.1		6.02		74.1		17.20		6.7		28	
WM2A	11:45	0.24	26.9	26.95	5.60	5.64	69.5	69.55	3.88	3.91	7.0	6.95	10	10.0
			27.0		5.68		69.6		3.94		6.9		10	
WM2A-Control	11:25	0.29	26.9	26.90	4.34	4.40	54.0	54.10	20.60	20.45	7.0	7.00	66	62.5
			26.9		4.45		54.2		20.30		7.0		59	
WM2B	12:05	0.03	27.9	27.85	6.93	6.90	87.6	87.55	3.05	3.08	6.7	6.75	11	12.5
			27.8		6.87		87.5		3.11		6.8		14	
WM2B-Control	12:10	0.02	28.1	28.05	5.90	5.93	75.1	75.10	1.03	1.01	7.0	7.05	3	3.0
			28.0		5.95		75.1		0.98		7.1		3	
WM3	13:05	0.37	27.2	27.25	6.10	6.13	76.3	76.35	12.60	12.55	7.8	7.75	14	13.0
			27.3		6.16		76.4		12.50		7.7		12	
WM3-Control	13:10	0.14	27.6	27.60	3.88	3.92	48.6	48.70	11.40	11.30	6.8	6.85	11	10.0
			27.6		3.96		48.8		11.20		6.9		9	
WM4	10:40	0.36	26.7	26.70	6.20	6.15	76.8	76.70	17.80	17.85	7.3	7.30	31	30.0
			26.7		6.09		76.6		17.90		7.3		29	
WM4-Control A	10:47	0.21	27.3	27.30	6.10	6.13	76.3	76.30	12.60	12.55	7.8	7.75	26	27.0
			27.3		6.15		76.3		12.50		7.7		28	
WM4-Control B	10:56	0.29	27.8	27.80	5.64	5.61	71.4	71.35	19.20	19.10	7.4	7.45	20	19.5
			27.8		5.57		71.3		19.00		7.5		19	

Date	8-Jul-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	11:06	0.25	28.8	28.80	5.01	4.99	64.1	64.05	15.90	15.80	7.1	7.10	26	27.0
			28.8		4.97		64.0		15.70		7.1		28	
WM1-Control	10:55	0.20	28.5	28.55	5.18	5.12	66.0	65.90	10.40	10.35	6.9	6.95	5	5.0
			28.6		5.05		65.8		10.30		7.0		5	
WM2A	11:35	0.29	28.7	28.75	5.40	5.45	68.6	68.60	35.90	36.00	7.0	7.00	10	10.5
			28.8		5.50		68.6		36.10		7.0		11	
WM2A-Control	12:03	0.08	28.6	28.60	5.37	5.31	68.8	68.75	15.30	15.25	7.1	7.10	7	7.0
			28.6		5.24		68.7		15.20		7.1		7	
WM2B	12:14	0.03	29.5	29.45	6.14	6.11	79.9	79.90	1.83	1.90	7.4	7.35	2	<2.0
			29.4		6.08		79.9		1.96		7.3		<2	
WM2B-Control	12:28	0.02	30.1	30.05	3.56	3.64	46.7	46.80	1.33	1.29	6.8	6.85	<2	<2.0
			30.0		3.71		46.9		1.25		6.9		<2	
WM3	13:42	0.30	29.8	29.85	5.60	5.54	73.3	73.20	1.61	1.64	6.6	6.65	3	2.5
			29.9		5.48		73.1		1.66		6.7		2	
WM3-Control	13:50	0.08	33.4	33.35	4.94	4.92	68.9	68.90	4.88	4.85	6.6	6.60	10	7.5
			33.3		4.90		68.9		4.81		6.6		5	
WM4	12:50	0.40	31.9	31.90	5.70	5.66	77.6	77.55	15.10	15.05	7.0	7.00	21	20.5
			31.9		5.62		77.5		15.00		7.0		20	
WM4-Control A	15:00	0.10	31.1	31.05	5.79	5.76	77.1	77.05	10.00	9.95	7.4	7.35	16	15.0
			31.0		5.73		77.0		9.89		7.3		14	
WM4-Control B	15:10	0.25	29.3	29.35	4.91	4.95	63.6	63.65	12.80	12.75	6.9	6.95	18	18.5
			29.4		4.99		63.7		12.70		7.0		19	

Date	10-Jul-13													
Location	**Time**	**Depth (m)**	**Temp** (℃)		**DO,** mg/L		**DOS** (%)		**Turbidity,** NTU		**pH,** pH Value		**SS,** mg/L	
WM1	11:08	0.37	26.9	26.95	5.37	5.40	66.0	66.15	72.50	71.65	7.2	7.20	68	67.5
			27.0		5.42		66.3		70.80		7.2		67	
WM1-Control	10:58	0.26	26.3	26.35	5.55	5.48	68.4	68.15	27.10	26.50	7.1	7.10	9	8.5
			26.4		5.41		67.9		25.90		7.1		8	
WM2A	11:45	0.32	26.9	26.90	5.11	5.07	63.6	63.40	10.80	10.95	6.9	6.95	10	9.5
			26.9		5.03		63.2		11.10		7.0		9	
WM2A-Control	12:06	0.16	26.3	26.35	6.54	6.46	80.0	79.70	18.80	18.65	6.9	6.90	7	7.5
			26.4		6.37		79.4		18.50		6.9		8	
WM2B	02:19	0.02	27.8	27.85	6.31	6.25	79.9	79.70	2.05	2.08	7.2	7.20	<2	<2.0
			27.9		6.19		79.5		2.11		7.2		<2	
WM2B-Control	12:25	0.03	24.8	24.75	4.37	4.45	52.7	52.45	1.39	1.42	6.7	6.70	<2	<2.0
			24.7		4.52		52.2		1.45		6.7		<2	
WM3	11:36	0.01	27.8	27.75	5.75	5.78	72.3	72.40	1.98	1.96	6.4	6.45	3	3.0
			27.7		5.81		72.5		1.93		6.5		3	
WM3-Control	11:35	0.12	27.4	27.45	5.10	5.06	64.1	63.95	2.04	2.01	6.3	6.35	3	3.5
			27.5		5.02		63.8		1.97		6.4		4	
WM4	13:17	0.22	28.4	28.35	6.09	6.03	76.9	76.65	20.10	19.85	6.8	6.80	27	26.5
			28.3		5.96		76.4		19.60		6.8		26	
WM4-Control A	13:22	0.04	27.7	27.70	5.96	6.00	75.2	75.35	6.87	6.78	7.1	7.05	4	4.5
			27.7		6.03		75.5		6.69		7.0		5	
WM4-Control B	13:32	0.05	27.6	27.60	5.41	5.48	68.2	68.40	14.50	14.40	6.8	6.85	18	17.0
			27.6		5.55		68.6		14.30		6.9		16	

Appendix I

Laboratory Data Report

- **Air Quality - 24-hour TSP**
- **Water Quality – Suspended Solids**

Air Quality - 24-hour TSP

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316511**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **20-JUN-2013**		
Order number	: **----**			*Date of issue*	: **24-JUN-2013**		
C-O-C number	: **H025513**			*No. of samples*	- *Received* : **10**		
Site	: **----**				- *Analysed* : **10**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316511 supersedes any previous reports with this reference. The completion date of analysis is 24-JUN-2013. 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 HK1316511 : Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.
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: **FILTER (TSP/RSP)**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**HK-TSP: Total Suspended Particulates**	**HK-TSP: Initial Weight**	**HK-TSP: Final Weight**		
			LOR Unit	0.0010 g	0.0010 g	0.0010 g		
				EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
204741 AM4	[17-JUN-2013]	HK1316511-001		**0.0296**	**3.6590**	**3.6886**		
25672 AM4	[18-JUN-2013]	HK1316511-002		**0.0318**	**3.5400**	**3.5718**		
204742 AM5	[17-JUN-2013]	HK1316511-003		**0.0233**	**3.6615**	**3.6848**		
25669 AM5	[18-JUN-2013]	HK1316511-004		**0.0248**	**3.5306**	**3.5554**		
204743 AM6	[17-JUN-2013]	HK1316511-005		**0.0693**	**3.6675**	**3.7368**		
25670 AM6	[18-JUN-2013]	HK1316511-006		**0.0482**	**3.5335**	**3.5817**		
25619 AM7A	[17-JUN-2013]	HK1316511-007		**0.0645**	**3.5427**	**3.6072**		
25671 AM7A	[18-JUN-2013]	HK1316511-008		**0.0708**	**3.5311**	**3.6019**		
25620 AM9A	[17-JUN-2013]	HK1316511-009		**0.0468**	**3.5468**	**3.5936**		
25653 AM9A	[18-JUN-2013]	HK1316511-010		**0.0417**	**3.5233**	**3.5650**		

Laboratory Duplicate (DUP) Report

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QCLot: 2933019)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1316613
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS0670_13	Quote number	: HK/1291a/2009 **	Date Samples Received	: 21-JUN-2013
Order number	: ----			Issue Date	: 25-JUN-2013
C-O-C number	: H025514			No. of samples received	: 5
Site	: ----			No. of samples analysed	: 5

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-JUN-2013

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: **HK1316613**

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

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: **FILTER (TSP/RSP)**

Compound	CAS Number	LOR	Unit	Client sample ID	25673 670-AM4	25674 670-AM5	25675 670-AM6	25676 670-AM7A	25677 670-AM9A
				Client sampling date / time	[19-JUN-2013]	[19-JUN-2013]	[19-JUN-2013]	[19-JUN-2013]	[19-JUN-2013]
					HK1316613-001	HK1316613-002	HK1316613-003	HK1316613-004	HK1316613-005
EA/ED: Physical and Aggregate Properties									
HK-TSP: Total Suspended Particulates	---	0.0010	g		0.0429	0.0514	0.0686	0.0605	0.0312
HK-TSP: Initial Weight	---	0.0010	g		3.5431	3.5368	3.5453	3.5426	3.5388
HK-TSP: Final Weight	---	0.0010	g		3.5860	3.5882	3.6139	3.6031	3.5700

Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

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

Matrix: AIR

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QC Lot: 2934050)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
Particulate Matters (QC Lot: 2934051)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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 4**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316888**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **---**	*Date received*	: **25-JUN-2013**		
Order number	: **----**			*Date of issue*	: **03-JUL-2013**		
C-O-C number	: **H025527-H025530**			*No. of samples*	- *Received* : **40**		
Site	: **----**				- *Analysed* : **40**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316888 supersedes any previous reports with this reference. The completion date of analysis is 27-JUN-2013. 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 HK1316888 : Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.
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: FILTER (TSP/RSP)			Compound	HK-TSP: Total Suspended Particulates	HK-TSP: Initial Weight	HK-TSP: Final Weight		
			LOR Unit	0.0010 g	0.0010 g	0.0010 g		
Client sample ID	Client sampling date / time	Laboratory sample ID		EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
204745 AM4	[13-JUN-2013]	HK1316888-001		**0.0288**	**3.6660**	**3.6948**		
25631 AM4	[14-JUN-2013]	HK1316888-002		**0.0258**	**3.5544**	**3.5802**		
25626 AM4	[15-JUN-2013]	HK1316888-003		**0.0221**	**3.5544**	**3.5765**		
25625 AM4	[16-JUN-2013]	HK1316888-004		**0.0250**	**3.5525**	**3.5775**		
25685 AM4	[20-JUN-2013]	HK1316888-005		**0.0429**	**3.5321**	**3.5750**		
25678 AM4	[21-JUN-2013]	HK1316888-006		**0.0457**	**3.5414**	**3.5871**		
204706 AM4	[22-JUN-2013]	HK1316888-007		**0.0362**	**3.6489**	**3.6851**		
25695 AM4	[23-JUN-2013]	HK1316888-008		**0.0320**	**3.5344**	**3.5664**		
204746 AM5	[13-JUN-2013]	HK1316888-009		**0.0359**	**3.6617**	**3.6976**		
25632 AM5	[14-JUN-2013]	HK1316888-010		**0.0249**	**3.5481**	**3.6730**		
25627 AM5	[15-JUN-2013]	HK1316888-011		**0.0236**	**3.5588**	**3.5824**		
25624 AM5	[16-JUN-2013]	HK1316888-012		**0.0259**	**3.5539**	**3.5798**		
25686 AM5	[20-JUN-2013]	HK1316888-013		**0.0505**	**3.5280**	**3.5785**		
25679 AM5	[21-JUN-2013]	HK1316888-014		**0.0329**	**3.5475**	**3.5804**		
25691 AM5	[22-JUN-2013]	HK1316888-015		**0.0302**	**3.5246**	**3.5548**		
25696 AM5	[23-JUN-2013]	HK1316888-016		**0.0328**	**3.5386**	**3.5714**		
25107 AM6	[13-JUN-2013]	HK1316888-017		**0.0418**	**3.5564**	**3.5982**		
204744 AM6	[14-JUN-2013]	HK1316888-018		**0.0398**	**3.6665**	**3.7063**		
25628 AM6	[15-JUN-2013]	HK1316888-019		**0.0391**	**3.5544**	**3.5935**		
25623 AM6	[16-JUN-2013]	HK1316888-020		**0.0454**	**3.5449**	**3.5903**		
25687 AM6	[20-JUN-2013]	HK1316888-021		**0.0680**	**3.5328**	**3.6028**		
25680 AM6	[21-JUN-2013]	HK1316888-022		**0.0382**	**3.5466**	**3.5848**		
25692 AM6	[22-JUN-2013]	HK1316888-023		**0.0364**	**3.5269**	**3.5633**		
25697 AM6	[23-JUN-2013]	HK1316888-024		**0.0362**	**3.5344**	**3.5906**		
204747 AM7A	[13-JUN-2013]	HK1316888-025		**0.0752**	**3.6612**	**3.7364**		
25633 AM7A	[14-JUN-2013]	HK1316888-026		**0.0897**	**3.5544**	**3.6441**		
25629 AM7A	[15-JUN-2013]	HK1316888-027		**0.0755**	**3.5511**	**3.6266**		
25622 AM7A	[16-JUN-2013]	HK1316888-028		**0.0631**	**3.5465**	**3.6096**		
25688 AM7A	[20-JUN-2013]	HK1316888-029		**0.0641**	**3.5316**	**3.5957**		
25681 AM7A	[21-JUN-2013]	HK1316888-030		**0.0671**	**3.5416**	**3.6087**		
25693 AM7A	[22-JUN-2013]	HK1316888-031		**0.0584**	**3.5275**	**3.5859**		
25698 AM7A	[23-JUN-2013]	HK1316888-032		**0.0613**	**3.5386**	**3.5999**		
204748 AM9A	[13-JUN-2013]	HK1316888-033		**0.0935**	**3.6718**	**3.7653**		
25618 AM9A	[14-JUN-2013]	HK1316888-034		**0.0818**	**3.5451**	**3.6269**		

Sub-Matrix: **FILTER (TSP/RSP)**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**HK-TSP: Total Suspended Particulates**	**HK-TSP: Initial Weight**	**HK-TSP: Final Weight**		
			LOR Unit	0.0010 g	0.0010 g	0.0010 g		
				EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
25630 AM9A	[15-JUN-2013]	HK1316888-035		**0.0618**	**3.5523**	**3.6141**		
25621 AM9A	[16-JUN-2013]	HK1316888-036		**0.0633**	**3.5513**	**3.6146**		
25690 AM9A	[20-JUN-2013]	HK1316888-037		**0.0431**	**3.5283**	**3.5714**		
25682 AM9A	[21-JUN-2013]	HK1316888-038		**0.0765**	**3.5352**	**3.6117**		
25694 AM9A	[22-JUN-2013]	HK1316888-039		**0.0360**	**3.5376**	**3.5736**		
25699 AM9A	[23-JUN-2013]	HK1316888-040		**0.0391**	**3.5390**	**3.5781**		

Laboratory Duplicate (DUP) Report

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QCLot: 2938820)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----
Particulate Matters (QCLot: 2938821)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----
Particulate Matters (QCLot: 2938822)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.8750	----	----	----	----	----	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 4**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1317996**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **---**	*Date received*	: **05-JUL-2013**		
Order number	: **----**			*Date of issue*	: **09-JUL-2013**		
C-O-C number	: **H025552-H025555**			*No. of samples*	- *Received* : **41**		
Site	: **CV/2013/03**				- *Analysed* : **41**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1317996 supersedes any previous reports with this reference. The completion date of analysis is 08-JUL-2013. 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 HK1317996 : Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.
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: **FILTER (TSP/RSP)**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound: HK-TSP: Total Suspended Particulates	HK-TSP: Initial Weight	HK-TSP: Final Weight		
		LOR Unit	0.0010 g	0.0010 g	0.0010 g		
			EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
25727 AM1	[29-JUN-2013]	HK1317996-001	**0.0268**	**3.6189**	**3.6457**		
25784 AM1	[30-JUN-2013]	HK1317996-002	**0.0367**	**3.6384**	**3.6751**		
25768 AM1	[01-JUL-2013]	HK1317996-003	**0.0309**	**3.6233**	**3.6542**		
25716 AM2	[27-JUN-2013]	HK1317996-004	**0.0437**	**3.6166**	**3.6603**		
25725 AM2	[28-JUN-2013]	HK1317996-005	**0.0357**	**3.6154**	**3.6511**		
25730 AM2	[29-JUN-2013]	HK1317996-006	**0.0420**	**3.6164**	**3.6584**		
25785 AM2	[30-JUN-2013]	HK1317996-007	**0.0387**	**3.6273**	**3.6660**		
25789 AM2	[01-JUL-2013]	HK1317996-008	**0.0330**	**3.6271**	**3.6601**		
25717 AM3	[27-JUN-2013]	HK1317996-009	**0.0357**	**3.6228**	**3.6585**		
25724 AM3	[28-JUN-2013]	HK1317996-010	**0.0298**	**3.6197**	**3.6495**		
25728 AM3	[29-JUN-2013]	HK1317996-011	**0.0264**	**3.6281**	**3.6545**		
25786 AM3	[30-JUN-2013]	HK1317996-012	**0.0349**	**3.6311**	**3.6660**		
25770 AM3	[01-JUL-2013]	HK1317996-013	**0.0338**	**3.6216**	**3.6554**		
25704 AM4	[24-JUN-2013]	HK1317996-014	**0.0324**	**3.5924**	**3.6248**		
25705 AM4	[25-JUN-2013]	HK1317996-015	**0.0394**	**3.5962**	**3.6356**		
25711 AM4	[26-JUN-2013]	HK1317996-016	**0.0323**	**3.6322**	**3.6645**		
25701 AM5	[24-JUN-2013]	HK1317996-017	**0.0298**	**3.5461**	**3.5759**		
25706 AM5	[25-JUN-2013]	HK1317996-018	**0.0333**	**3.6024**	**3.6357**		
25710 AM5	[26-JUN-2013]	HK1317996-019	**0.0290**	**3.6196**	**3.6486**		
25702 AM6	[24-JUN-2013]	HK1317996-020	**0.0384**	**3.5522**	**3.5906**		
25707 AM6	[25-JUN-2013]	HK1317996-021	**0.0692**	**3.6286**	**3.6978**		
25712 AM6	[26-JUN-2013]	HK1317996-022	**0.0580**	**3.6274**	**3.6854**		
25703 AM7A	[24-JUN-2013]	HK1317996-023	**0.0713**	**3.5911**	**3.6624**		
25708 AM7A	[25-JUN-2013]	HK1317996-024	**0.0684**	**3.6124**	**3.6808**		
25713 AM7A	[26-JUN-2013]	HK1317996-025	**0.0728**	**3.6267**	**3.6995**		
25715 AM8	[27-JUN-2013]	HK1317996-026	**0.0384**	**3.6216**	**3.6600**		
25723 AM8	[28-JUN-2013]	HK1317996-027	**0.0363**	**3.6160**	**3.6523**		
25729 AM8	[29-JUN-2013]	HK1317996-028	**0.0400**	**3.6204**	**3.6604**		
25767 AM8	[30-JUN-2013]	HK1317996-029	**0.0469**	**3.6291**	**3.6760**		
25711 AM8	[01-JUL-2013]	HK1317996-030	**0.0364**	**3.6211**	**3.6575**		
25700 AM9A	[24-JUN-2013]	HK1317996-031	**0.0472**	**3.5418**	**3.5890**		
25709 AM9A	[25-JUN-2013]	HK1317996-032	**0.0760**	**3.6259**	**3.7019**		
25714 AM9A	[26-JUN-2013]	HK1317996-033	**0.0665**	**3.6355**	**3.7020**		
25783 AM1	[02-JUL-2013]	HK1317996-034	**0.0272**	**3.6402**	**3.6674**		

Sub-Matrix: **FILTER (TSP/RSP)**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**HK-TSP: Total Suspended Particulates**	**HK-TSP: Initial Weight**	**HK-TSP: Final Weight**		
			LOR Unit	0.0010 g	0.0010 g	0.0010 g		
				EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
25779 AM1	[03-JUL-2013]	HK1317996-035		**0.0232**	**3.6270**	**3.6502**		
25773 AM2	[02-JUL-2013]	HK1317996-036		**0.0393**	**3.6176**	**3.6569**		
25780 AM2	[03-JUL-2013]	HK1317996-037		**0.0320**	**3.6263**	**3.6583**		
25782 AM3	[02-JUL-2013]	HK1317996-038		**0.0274**	**3.6274**	**3.6548**		
25781 AM3	[03-JUL-2013]	HK1317996-039		**0.0330**	**3.6254**	**3.6584**		
25772 AM8	[02-JUL-2013]	HK1317996-040		**0.0309**	**3.6201**	**3.6510**		
25778 AM8	[03-JUL-2013]	HK1317996-041		**0.0360**	**3.6248**	**3.6608**		

Laboratory Duplicate (DUP) Report

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QCLot: 2955494)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
Particulate Matters (QCLot: 2955495)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
Particulate Matters (QCLot: 2955496)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1318484**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **09-JUL-2013**		
Order number	: **----**			*Date of issue*	: **11-JUL-2013**		
C-O-C number	: **H025565,H025569**			*No. of samples*	- *Received* : **16**		
Site	: **----**				- *Analysed* : **16**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1318484 supersedes any previous reports with this reference. The completion date of analysis is 11-JUL-2013. 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 HK1318484 : Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.
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: **FILTER (TSP/RSP)**

Client sample ID	Client sampling date / time	Laboratory sample ID	HK-TSP: Total Suspended Particulates	HK-TSP: Initial Weight	HK-TSP: Final Weight		
Compound							
LOR Unit			0.0010 g	0.0010 g	0.0010 g		
			EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
25731 AM1	[04-JUL-2013]	HK1318484-001	**0.0301**	**3.6182**	**3.6483**		
25732 AM2	[04-JUL-2013]	HK1318484-002	**0.0330**	**3.6251**	**3.6581**		
25733 AM3	[04-JUL-2013]	HK1318484-003	**0.0424**	**3.6295**	**3.6719**		
25734 AM8	[04-JUL-2013]	HK1318484-004	**0.0377**	**3.6275**	**3.6652**		
25774 AM1	[05-JUL-2013]	HK1318484-005	**0.0300**	**3.6302**	**3.6602**		
25736 AM1	[06-JUL-2013]	HK1318484-006	**0.0254**	**3.6309**	**3.6560**		
25743 AM1	[07-JUL-2013]	HK1318484-007	**0.0245**	**3.6180**	**3.6425**		
25775 AM2	[05-JUL-2013]	HK1318484-008	**0.0570**	**3.6238**	**3.6808**		
25737 AM2	[06-JUL-2013]	HK1318484-009	**0.0377**	**3.6307**	**3.6684**		
25742 AM2	[07-JUL-2013]	HK1318484-010	**0.0498**	**3.6174**	**3.6672**		
25776 AM3	[05-JUL-2013]	HK1318484-011	**0.0338**	**3.6284**	**3.6622**		
25788 AM3	[06-JUL-2013]	HK1318484-012	**0.0385**	**3.6280**	**3.6665**		
25741 AM3	[07-JUL-2013]	HK1318484-013	**0.0308**	**3.6279**	**3.6587**		
25777 AM8	[05-JUL-2013]	HK1318484-014	**0.0464**	**3.6243**	**3.6707**		
25739 AM8	[06-JUL-2013]	HK1318484-015	**0.0319**	**3.6306**	**3.6625**		
25740 AM8	[07-JUL-2013]	HK1318484-016	**0.0396**	**3.6130**	**3.6526**		

Laboratory Duplicate (DUP) Report

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QCLot: 2961171)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1318624
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00670_13	Quote number	: HK/1291a/2009 **	Date Samples Received	: 10-JUL-2013
Order number	: ----			Issue Date	: 12-JUL-2013
C-O-C number	: H025573			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 12-JUL-2013

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: **HK1318624**

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

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: **FILTER (TSP/RSP)**

Compound	CAS Number	LOR	Unit	Client sample ID: 25744 AM1	25745 AM2	25746 AM3	25747 AM8	
				Client sampling date / time: [08-JUL-2013]	[08-JUL-2013]	[08-JUL-2013]	[08-JUL-2013]	
				HK1318624-001	HK1318624-002	HK1318624-003	HK1318624-004	
EA/ED: Physical and Aggregate Properties								
HK-TSP: Total Suspended Particulates	---	0.0010	g	**0.0203**	**0.0479**	**0.0484**	**0.0357**	
HK-TSP: Initial Weight	---	0.0010	g	**3.6215**	**3.6136**	**3.6155**	**3.6140**	
HK-TSP: Final Weight	---	0.0010	g	**3.6418**	**3.6615**	**3.6639**	**3.6497**	

Laboratory Duplicate (DUP) Report

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QC Lot: 2963545)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1318808
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00670_13	Quote number	: HK/224/2013	Date Samples Received	: 11-JUL-2013
Order number	: ----			Issue Date	: 15-JUL-2013
C-O-C number	: H025579			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 15-JUL-2013

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: **HK1318808**

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

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

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

Analytical Results

Sub-Matrix: **FILTER (TSP/RSP)**

Compound	CAS Number	LOR	Unit	Client sample ID: 25749 AM1	25750 AM2	25751 AM3	25748 AM8	
				Client sampling date / time: [09-JUL-2013]	[09-JUL-2013]	[09-JUL-2013]	[09-JUL-2013]	
				HK1318808-001	HK1318808-002	HK1318808-003	HK1318808-004	
EA/ED: Physical and Aggregate Properties								
HK-TSP: Total Suspended Particulates	---	0.0010	g	**0.0265**	**0.0461**	**0.0500**	**0.0363**	
HK-TSP: Initial Weight	---	0.0010	g	**3.6225**	**3.6173**	**3.6204**	**3.6222**	
HK-TSP: Final Weight	---	0.0010	g	**3.6490**	**3.6634**	**3.6704**	**3.6585**	

Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

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

Matrix: AIR

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
Particulate Matters (QC Lot: 2964576)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	3.6200	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	3.6200	----	----	----	----	----	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1318830
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00670_13	Quote number	: HK/224/2013	Date Samples Received	: 12-JUL-2013
Order number	: ----			Issue Date	: 15-JUL-2013
C-O-C number	: H025582			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 15-JUL-2013

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: **HK1318830**

Sample(s) were received in an ambient condition.

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: **FILTER (TSP/RSP)**

Compound	CAS Number	LOR	Unit	Client sample ID: 25788 AM1	25791 AM2	25790 AM3	25789 AM8	
			Client sampling date / time:	[10-JUL-2013]	[10-JUL-2013]	[10-JUL-2013]	[10-JUL-2013]	
				HK1318830-001	HK1318830-002	HK1318830-003	HK1318830-004	
EA/ED: Physical and Aggregate Properties								
HK-TSP: Total Suspended Particulates	---	0.0010	g	**0.0252**	**0.0444**	**0.0556**	**0.0337**	
HK-TSP: Initial Weight	---	0.0010	g	**3.6314**	**3.6321**	**3.6237**	**3.6247**	
HK-TSP: Final Weight	---	0.0010	g	**3.6566**	**3.6765**	**3.6793**	**3.6584**	

Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

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

Matrix: AIR

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
Particulate Matters (QC Lot: 2965915)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	3.6200	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	3.6200	----	----	----	----	----	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1319065
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044		
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021		
Project	: TCS00670_13	Quote number	: HK/224/2013	Date Samples Received	: 15-JUL-2013
Order number	: ----			Issue Date	: 16-JUL-2013
C-O-C number	: H025583			No. of samples received	: 2
Site	: ----			No. of samples analysed	: 2

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 16-JUL-2013

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: **HK1319065**

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

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: **FILTER (TSP/RSP)**

Compound	CAS Number	LOR	Unit	Client sample ID: 25815 AM1 Client sampling date / time: [11-JUL-2013] HK1319065-001	Client sample ID: 25792 AM1 Client sampling date / time: [12-JUL-2013] HK1319065-002			
EA/ED: Physical and Aggregate Properties								
HK-TSP: Total Suspended Particulates	---	0.0010	g	**0.0401**	**0.0338**			
HK-TSP: Initial Weight	---	0.0010	g	**3.6305**	**3.6242**			
HK-TSP: Final Weight	---	0.0010	g	**3.6706**	**3.6580**			

Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

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

Matrix: AIR

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
Particulate Matters (QC Lot: 2969295)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7155	----	----	----	----	----	----	----

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

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

Water Quality – Suspended Solids

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316371**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **19-JUN-2013**		
Order number	: **----**			*Date of issue*	: **25-JUN-2013**		
C-O-C number	: **H028554**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316371 supersedes any previous reports with this reference. The completion date of analysis is 24-JUN-2013. 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 HK1316371 : 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	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				
WM1	[17-JUN-2013]	HK1316371-001	**38**				
WM1 DUPLICATE	[17-JUN-2013]	HK1316371-002	**39**				
WM1 CONTROL	[17-JUN-2013]	HK1316371-003	**19**				
WM1 CONTROL DUPLICATE	[17-JUN-2013]	HK1316371-004	**18**				
WM2	[17-JUN-2013]	HK1316371-005	**19**				
WM2 DUPLICATE	[17-JUN-2013]	HK1316371-006	**17**				
WM2A CONTROL	[17-JUN-2013]	HK1316371-007	**10**				
WM2A CONTROL DUPLICATE	[17-JUN-2013]	HK1316371-008	**10**				
WM2B	[17-JUN-2013]	HK1316371-009	**7**				
WM2B DUPLICATE	[17-JUN-2013]	HK1316371-010	**8**				
WM2B CONTROL	[17-JUN-2013]	HK1316371-011	**6**				
WM2B CONTROL DUPLICATE	[17-JUN-2013]	HK1316371-012	**7**				
WM3	[17-JUN-2013]	HK1316371-013	**7**				
WM3 DUPLICATE	[17-JUN-2013]	HK1316371-014	**7**				
WM3 CONTROL	[17-JUN-2013]	HK1316371-015	**22**				
WM3 CONTROL DUPLICATE	[17-JUN-2013]	HK1316371-016	**23**				
WM4	[17-JUN-2013]	HK1316371-017	**23**				
WM4 DUPLICATE	[17-JUN-2013]	HK1316371-018	**24**				
WM4 CONTROL A	[17-JUN-2013]	HK1316371-019	**7**				
WM4 CONTROL A DUPLICATE	[17-JUN-2013]	HK1316371-020	**6**				
WM4 CONTROL B	[17-JUN-2013]	HK1316371-021	**7**				
WM4 CONTROL B DUPLICATE	[17-JUN-2013]	HK1316371-022	**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: 2931880)								
HK1316087-009	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1316371-009	WM2B	EA025: Suspended Solids (SS)	----	2	mg/L	7	8	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2931881)								
HK1316371-019	WM4 CONTROL A	EA025: Suspended Solids (SS)	----	2	mg/L	7	7	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: 2931880)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2931881)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	84	114	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316373**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **17-JUN-2013**		
Order number	: **----**			*Date of issue*	: **26-JUN-2013**		
C-O-C number	: **H028550**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316373 supersedes any previous reports with this reference. The completion date of analysis is 25-JUN-2013. 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 HK1316373 : 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	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				
WM1	[14-JUN-2013]	HK1316373-001	**35**				
WM1 DUPLICATE	[14-JUN-2013]	HK1316373-002	**34**				
WM1 CONTROL	[14-JUN-2013]	HK1316373-003	**7**				
WM1 CONTROL DUPLICATE	[14-JUN-2013]	HK1316373-004	**8**				
WM2	[14-JUN-2013]	HK1316373-005	**8**				
WM2 DUPLICATE	[14-JUN-2013]	HK1316373-006	**7**				
WM2A CONTROL	[14-JUN-2013]	HK1316373-007	**84**				
WM2A CONTROL DUPLICATE	[14-JUN-2013]	HK1316373-008	**88**				
WM2B	[14-JUN-2013]	HK1316373-009	**72**				
WM2B DUPLICATE	[14-JUN-2013]	HK1316373-010	**73**				
WM2B CONTROL	[14-JUN-2013]	HK1316373-011	**101**				
WM2B CONTROL DUPLICATE	[14-JUN-2013]	HK1316373-012	**98**				
WM3	[14-JUN-2013]	HK1316373-013	**46**				
WM3 DUPLICATE	[14-JUN-2013]	HK1316373-014	**46**				
WM3 CONTROL	[14-JUN-2013]	HK1316373-015	**93**				
WM3 CONTROL DUPLICATE	[14-JUN-2013]	HK1316373-016	**90**				
WM4	[14-JUN-2013]	HK1316373-017	**13**				
WM4 DUPLICATE	[14-JUN-2013]	HK1316373-018	**11**				
WM4 CONTROL A	[14-JUN-2013]	HK1316373-019	**63**				
WM4 CONTROL A DUPLICATE	[14-JUN-2013]	HK1316373-020	**61**				
WM4 CONTROL B	[14-JUN-2013]	HK1316373-021	**87**				
WM4 CONTROL B DUPLICATE	[14-JUN-2013]	HK1316373-022	**91**				

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: 2934085)								
HK1316258-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	12	11	0.0
HK1316373-003	WM1 CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	7	7	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2934086)								
HK1316373-013	WM3	EA025: Suspended Solids (SS)	----	2	mg/L	46	47	0.0
HK1316584-001	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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 2934085)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2934086)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316590**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **20-JUN-2013**		
Order number	: **----**			*Date of issue*	: **26-JUN-2013**		
C-O-C number	: **H025512**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316590 supersedes any previous reports with this reference. The completion date of analysis is 25-JUN-2013. 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 HK1316590 : 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				
WM1	[19-JUN-2013]	HK1316590-001		**19**				
WM1 DUPLICATE	[19-JUN-2013]	HK1316590-002		**21**				
WM1 CONTROL	[19-JUN-2013]	HK1316590-003		**5**				
WM1 CONTROL DUPLICATE	[19-JUN-2013]	HK1316590-004		**6**				
WM2	[19-JUN-2013]	HK1316590-005		**4**				
WM2 DUPLICATE	[19-JUN-2013]	HK1316590-006		**5**				
WM2A CONTROL	[19-JUN-2013]	HK1316590-007		**5**				
WM2A CONTROL DUPLICATE	[19-JUN-2013]	HK1316590-008		**4**				
WM2B	[19-JUN-2013]	HK1316590-009		**7**				
WM2B DUPLICATE	[19-JUN-2013]	HK1316590-010		**6**				
WM2B CONTROL	[19-JUN-2013]	HK1316590-011		**8**				
WM2B CONTROL DUPLICATE	[19-JUN-2013]	HK1316590-012		**7**				
WM3	[19-JUN-2013]	HK1316590-013		**12**				
WM3 DUPLICATE	[19-JUN-2013]	HK1316590-014		**12**				
WM3 CONTROL	[19-JUN-2013]	HK1316590-015		**8**				
WM3 CONTROL DUPLICATE	[19-JUN-2013]	HK1316590-016		**9**				
WM4	[19-JUN-2013]	HK1316590-017		**19**				
WM4 DUPLICATE	[19-JUN-2013]	HK1316590-018		**20**				
WM4 CONTROL A	[19-JUN-2013]	HK1316590-019		**14**				
WM4 CONTROL A DUPLICATE	[19-JUN-2013]	HK1316590-020		**12**				
WM4 CONTROL B	[19-JUN-2013]	HK1316590-021		**21**				
WM4 CONTROL B DUPLICATE	[19-JUN-2013]	HK1316590-022		**20**				

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: 2934086)								
HK1316373-013	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	46	47	0.0
HK1316584-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2934087)								
HK1316590-005	WM2	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1316590-015	WM3 CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	18	18	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: 2934086)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2934087)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	106	----	84	114	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1316897**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **----**	*Date received*	: **25-JUN-2013**		
Order number	: **----**			*Date of issue*	: **02-JUL-2013**		
C-O-C number	: **H025519**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316897 supersedes any previous reports with this reference. The completion date of analysis is 28-JUN-2013. 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 HK1316897 : 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	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				
WM1	[21-JUN-2013]	HK1316897-001	**24**				
WM1 DUPLICATE	[21-JUN-2013]	HK1316897-002	**23**				
WM1 CONTROL	[21-JUN-2013]	HK1316897-003	**26**				
WM1 CONTROL DUPLICATE	[21-JUN-2013]	HK1316897-004	**25**				
WM2	[21-JUN-2013]	HK1316897-005	**5**				
WM2 DUPLICATE	[21-JUN-2013]	HK1316897-006	**6**				
WM2A CONTROL	[21-JUN-2013]	HK1316897-007	**10**				
WM2A CONTROL DUPLICATE	[21-JUN-2013]	HK1316897-008	**10**				
WM2B	[21-JUN-2013]	HK1316897-009	**3**				
WM2B DUPLICATE	[21-JUN-2013]	HK1316897-010	**2**				
WM2B CONTROL	[21-JUN-2013]	HK1316897-011	**3**				
WM2B CONTROL DUPLICATE	[21-JUN-2013]	HK1316897-012	**3**				
WM3	[21-JUN-2013]	HK1316897-013	**6**				
WM3 DUPLICATE	[21-JUN-2013]	HK1316897-014	**6**				
WM3 CONTROL	[21-JUN-2013]	HK1316897-015	**6**				
WM3 CONTROL DUPLICATE	[21-JUN-2013]	HK1316897-016	**5**				
WM4	[21-JUN-2013]	HK1316897-017	**46**				
WM4 DUPLICATE	[21-JUN-2013]	HK1316897-018	**48**				
WM4 CONTROL A	[21-JUN-2013]	HK1316897-019	**4**				
WM4 CONTROL A DUPLICATE	[21-JUN-2013]	HK1316897-020	**6**				
WM4 CONTROL B	[21-JUN-2013]	HK1316897-021	**17**				
WM4 CONTROL B DUPLICATE	[21-JUN-2013]	HK1316897-022	**17**				

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: 2939939)								
HK1316776-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	14	13	0.0
HK1316793-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	22	25	14.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2939940)								
HK1316897-005	WM2	EA025: Suspended Solids (SS)	----	2	mg/L	5	6	0.0
HK1316897-015	WM3 CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	6	6	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: 2939939)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2939940)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	84	114	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ACTION UNITED ENVIRO SERVICES	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3		
Contact	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1316898		
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com				
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044				
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021				
Project	: TCS00670_13	Quote number	: ----	Date received	: 25-JUN-2013		
Order number	: ----			Date of issue	: 02-JUL-2013		
C-O-C number	: H025520			No. of samples	- Received :	22	
Site	: ----				- Analysed :	22	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1316898 supersedes any previous reports with this reference. The completion date of analysis is 28-JUN-2013. 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 HK1316898 : 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	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				
WM1	[24-JUN-2013]	HK1316898-001	**275**				
WM1 DUPLICATE	[24-JUN-2013]	HK1316898-002	**265**				
WM1 CONTROL	[24-JUN-2013]	HK1316898-003	**457**				
WM1 CONTROL DUPLICATE	[24-JUN-2013]	HK1316898-004	**437**				
WM2	[24-JUN-2013]	HK1316898-005	**48**				
WM2 DUPLICATE	[24-JUN-2013]	HK1316898-006	**45**				
WM2A CONTROL	[24-JUN-2013]	HK1316898-007	**44**				
WM2A CONTROL DUPLICATE	[24-JUN-2013]	HK1316898-008	**45**				
WM2B	[24-JUN-2013]	HK1316898-009	**26**				
WM2B DUPLICATE	[24-JUN-2013]	HK1316898-010	**29**				
WM2B CONTROL	[24-JUN-2013]	HK1316898-011	**28**				
WM2B CONTROL DUPLICATE	[24-JUN-2013]	HK1316898-012	**28**				
WM3	[24-JUN-2013]	HK1316898-013	**45**				
WM3 DUPLICATE	[24-JUN-2013]	HK1316898-014	**44**				
WM3 CONTROL	[24-JUN-2013]	HK1316898-015	**33**				
WM3 CONTROL DUPLICATE	[24-JUN-2013]	HK1316898-016	**36**				
WM4	[24-JUN-2013]	HK1316898-017	**32**				
WM4 DUPLICATE	[24-JUN-2013]	HK1316898-018	**32**				
WM4 CONTROL A	[24-JUN-2013]	HK1316898-019	**49**				
WM4 CONTROL A DUPLICATE	[24-JUN-2013]	HK1316898-020	**50**				
WM4 CONTROL B	[24-JUN-2013]	HK1316898-021	**189**				
WM4 CONTROL B DUPLICATE	[24-JUN-2013]	HK1316898-022	**187**				

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: 2939940)								
HK1316897-005	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	5	6	0.0
HK1316897-015	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	6	6	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2939941)								
HK1316898-003	WM1 CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	457	465	1.7
HK1316898-013	WM3	EA025: Suspended Solids (SS)	----	2	mg/L	45	48	5.8

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: 2939940)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2939941)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	104	----	84	114	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1317302**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **----**	*Date received*	: **28-JUN-2013**		
Order number	: **----**			*Date of issue*	: **05-JUL-2013**		
C-O-C number	: **H025537**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1317302 supersedes any previous reports with this reference. The completion date of analysis is 02-JUL-2013. 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 HK1317302 : 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		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				
WM1	[26-JUN-2013]	HK1317302-001	**12**				
WM1 DUPLICATE	[26-JUN-2013]	HK1317302-002	**12**				
WM1 CONTROL	[26-JUN-2013]	HK1317302-003	**8**				
WM1 CONTROL DUPLICATE	[26-JUN-2013]	HK1317302-004	**8**				
WM2	[26-JUN-2013]	HK1317302-005	**7**				
WM2 DUPLICATE	[26-JUN-2013]	HK1317302-006	**7**				
WM2A CONTROL	[26-JUN-2013]	HK1317302-007	**5**				
WM2A CONTROL DUPLICATE	[26-JUN-2013]	HK1317302-008	**4**				
WM2B	[26-JUN-2013]	HK1317302-009	**9**				
WM2B DUPLICATE	[26-JUN-2013]	HK1317302-010	**10**				
WM2B CONTROL	[26-JUN-2013]	HK1317302-011	**3**				
WM2B CONTROL DUPLICATE	[26-JUN-2013]	HK1317302-012	**2**				
WM3	[26-JUN-2013]	HK1317302-013	**4**				
WM3 DUPLICATE	[26-JUN-2013]	HK1317302-014	**4**				
WM3 CONTROL	[26-JUN-2013]	HK1317302-015	**4**				
WM3 CONTROL DUPLICATE	[26-JUN-2013]	HK1317302-016	**4**				
WM4	[26-JUN-2013]	HK1317302-017	**20**				
WM4 DUPLICATE	[26-JUN-2013]	HK1317302-018	**19**				
WM4 CONTROL A	[26-JUN-2013]	HK1317302-019	**10**				
WM4 CONTROL A DUPLICATE	[26-JUN-2013]	HK1317302-020	**9**				
WM4 CONTROL B	[26-JUN-2013]	HK1317302-021	**56**				
WM4 CONTROL B DUPLICATE	[26-JUN-2013]	HK1317302-022	**54**				

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: 2945008)								
HK1317004-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1317012-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2945009)								
HK1317302-007	WM2A CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	5	5	0.0
HK1317302-017	WM4	EA025: Suspended Solids (SS)	----	2	mg/L	20	21	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: 2945008)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	89.0	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2945009)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	95.5	----	86	112	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1317495**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **02-JUL-2013**		
Order number	: **----**			*Date of issue*	: **08-JUL-2013**		
C-O-C number	: **H025543**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1317495 supersedes any previous reports with this reference. The completion date of analysis is 04-JUL-2013. 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 HK1317495 : 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.

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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				
WM1	[29-JUN-2013]	HK1317495-001		**18**				
WM1 DUPLICATE	[29-JUN-2013]	HK1317495-002		**19**				
WM1 CONTROL	[29-JUN-2013]	HK1317495-003		**7**				
WM1 CONTROL DUPLICATE	[29-JUN-2013]	HK1317495-004		**8**				
WM2	[29-JUN-2013]	HK1317495-005		**3**				
WM2 DUPLICATE	[29-JUN-2013]	HK1317495-006		**4**				
WM2A CONTROL	[29-JUN-2013]	HK1317495-007		**72**				
WM2A CONTROL DUPLICATE	[29-JUN-2013]	HK1317495-008		**78**				
WM2B	[29-JUN-2013]	HK1317495-009		**10**				
WM2B DUPLICATE	[29-JUN-2013]	HK1317495-010		**12**				
WM2B CONTROL	[29-JUN-2013]	HK1317495-011		<2				
WM2B CONTROL DUPLICATE	[29-JUN-2013]	HK1317495-012		<2				
WM3	[29-JUN-2013]	HK1317495-013		**4**				
WM3 DUPLICATE	[29-JUN-2013]	HK1317495-014		**3**				
WM3 CONTROL	[29-JUN-2013]	HK1317495-015		**2**				
WM3 CONTROL DUPLICATE	[29-JUN-2013]	HK1317495-016		**4**				
WM4	[29-JUN-2013]	HK1317495-017		**14**				
WM4 DUPLICATE	[29-JUN-2013]	HK1317495-018		**14**				
WM4 CONTROL A	[29-JUN-2013]	HK1317495-019		**3**				
WM4 CONTROL A DUPLICATE	[29-JUN-2013]	HK1317495-020		**4**				
WM4 CONTROL B	[29-JUN-2013]	HK1317495-021		**15**				
WM4 CONTROL B DUPLICATE	[29-JUN-2013]	HK1317495-022		**18**				

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: 2950949)								
HK1317474-014	Anonymous	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.0
HK1317474-031	Anonymous	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2950950)								
HK1317495-008	WM2A CONTROL DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	78	80	1.8
HK1317495-018	WM4 DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	14	14	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: 2950949)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	95.5	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2950950)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	105	----	86	112	----	----

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	: MR BEN TAM	Contact	: Fung Lim Chee, Richard	Work Order	: HK1317732		
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	: Bentam@fordbusiness.com	E-mail	: Richard.Fung@alsglobal.com				
Telephone	: +852 2959 6059	Telephone	: +852 2610 1044				
Facsimile	: +852 2959 6079	Facsimile	: +852 2610 2021				
Project	: TCS00670_13	Quote number	: HK/1291a/2009 **	Date received	: 03-JUL-2013		
Order number	: ----			Date of issue	: 09-JUL-2013		
C-O-C number	: H025547			No. of samples	- Received :	22	
Site	: ----				- Analysed :	22	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1317732 supersedes any previous reports with this reference. The completion date of analysis is 08-JUL-2013. 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 HK1317732 : 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.

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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				
WM1	[02-JUL-2013]	HK1317732-001		**32**				
WM1 DUPLICATE	[02-JUL-2013]	HK1317732-002		**31**				
WM1 CONTROL	[02-JUL-2013]	HK1317732-003		**10**				
WM1 CONTROL DUPLICATE	[02-JUL-2013]	HK1317732-004		**9**				
WM2	[02-JUL-2013]	HK1317732-005		**8**				
WM2 DUPLICATE	[02-JUL-2013]	HK1317732-006		**7**				
WM2A CONTROL	[02-JUL-2013]	HK1317732-007		**5**				
WM2A CONTROL DUPLICATE	[02-JUL-2013]	HK1317732-008		**6**				
WM2B	[02-JUL-2013]	HK1317732-009		**4**				
WM2B DUPLICATE	[02-JUL-2013]	HK1317732-010		**3**				
WM2B CONTROL	[02-JUL-2013]	HK1317732-011		<2				
WM2B CONTROL DUPLICATE	[02-JUL-2013]	HK1317732-012		<2				
WM3	[02-JUL-2013]	HK1317732-013		**2**				
WM3 DUPLICATE	[02-JUL-2013]	HK1317732-014		**2**				
WM3 CONTROL	[02-JUL-2013]	HK1317732-015		**2**				
WM3 CONTROL DUPLICATE	[02-JUL-2013]	HK1317732-016		**3**				
WM4	[02-JUL-2013]	HK1317732-017		**18**				
WM4 DUPLICATE	[02-JUL-2013]	HK1317732-018		**19**				
WM4 CONTROL A	[02-JUL-2013]	HK1317732-019		**9**				
WM4 CONTROL A DUPLICATE	[02-JUL-2013]	HK1317732-020		**9**				
WM4 CONTROL B	[02-JUL-2013]	HK1317732-021		**16**				
WM4 CONTROL B DUPLICATE	[02-JUL-2013]	HK1317732-022		**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: 2952141)								
HK1317582-008	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
HK1317732-004	WM1 CONTROL DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	9	10	12.3
EA/ED: Physical and Aggregate Properties (QC Lot: 2952142)								
HK1317732-014	WM3 DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1317736-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	7	8	14.8

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: 2952141)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	99.0	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2952142)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	101	----	86	112	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1318081**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **05-JUL-2013**		
Order number	: **----**			*Date of issue*	: **11-JUL-2013**		
C-O-C number	: **H025556**			*No. of samples*	- *Received* :	**22**	
Site	: **----**				- *Analysed* :	**22**	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1318081 supersedes any previous reports with this reference. The completion date of analysis is 10-JUL-2013. 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 HK1318081 : 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.

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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				
WM1	[04-JUL-2013]	HK1318081-001	**16**				
WM1 DUPLICATE	[04-JUL-2013]	HK1318081-002	**16**				
WM1 CONTROL	[04-JUL-2013]	HK1318081-003	**4**				
WM1 CONTROL DUPLICATE	[04-JUL-2013]	HK1318081-004	**4**				
WM2	[04-JUL-2013]	HK1318081-005	**4**				
WM2 DUPLICATE	[04-JUL-2013]	HK1318081-006	**5**				
WM2A CONTROL	[04-JUL-2013]	HK1318081-007	**4**				
WM2A CONTROL DUPLICATE	[04-JUL-2013]	HK1318081-008	**4**				
WM2B	[04-JUL-2013]	HK1318081-009	**2**				
WM2B DUPLICATE	[04-JUL-2013]	HK1318081-010	<2				
WM2B CONTROL	[04-JUL-2013]	HK1318081-011	<2				
WM2B CONTROL DUPLICATE	[04-JUL-2013]	HK1318081-012	<2				
WM3	[04-JUL-2013]	HK1318081-013	**6**				
WM3 DUPLICATE	[04-JUL-2013]	HK1318081-014	**5**				
WM3 CONTROL	[04-JUL-2013]	HK1318081-015	**4**				
WM3 CONTROL DUPLICATE	[04-JUL-2013]	HK1318081-016	**5**				
WM4	[04-JUL-2013]	HK1318081-017	**21**				
WM4 DUPLICATE	[04-JUL-2013]	HK1318081-018	**20**				
WM4 CONTROL A	[04-JUL-2013]	HK1318081-019	**10**				
WM4 CONTROL A DUPLICATE	[04-JUL-2013]	HK1318081-020	**6**				
WM4 CONTROL B	[04-JUL-2013]	HK1318081-021	**14**				
WM4 CONTROL B DUPLICATE	[04-JUL-2013]	HK1318081-022	**13**				

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: 2957576)								
HK1318081-001	WM1	EA025: Suspended Solids (SS)	----	2	mg/L	16	17	8.6
HK1318081-011	WM2B CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2957577)								
HK1318081-021	WM4 CONTROL B	EA025: Suspended Solids (SS)	----	2	mg/L	14	14	0.0
HK1318172-004	Anonymous	EA025: Suspended Solids (SS)	----	2.0	mg/L	<2.0	<2.0	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: 2957576)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	92.0	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2957577)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	86	112	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1318468**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **09-JUL-2013**		
Order number	: **----**			*Date of issue*	: **15-JUL-2013**		
C-O-C number	: **H025561**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1318468 supersedes any previous reports with this reference. The completion date of analysis is 12-JUL-2013. 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 HK1318468 : 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		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				
WM1	[06-JUL-2013]	HK1318468-001	**21**				
WM1 DUPLICATE	[06-JUL-2013]	HK1318468-002	**21**				
WM1 CONTROL	[06-JUL-2013]	HK1318468-003	**32**				
WM1 CONTROL DUPLICATE	[06-JUL-2013]	HK1318468-004	**28**				
WM2	[06-JUL-2013]	HK1318468-005	**10**				
WM2 DUPLICATE	[06-JUL-2013]	HK1318468-006	**10**				
WM2A CONTROL	[06-JUL-2013]	HK1318468-007	**66**				
WM2A CONTROL DUPLICATE	[06-JUL-2013]	HK1318468-008	**59**				
WM2B	[06-JUL-2013]	HK1318468-009	**14**				
WM2B DUPLICATE	[06-JUL-2013]	HK1318468-010	**11**				
WM2B CONTROL	[06-JUL-2013]	HK1318468-011	**3**				
WM2B CONTROL DUPLICATE	[06-JUL-2013]	HK1318468-012	**3**				
WM3	[06-JUL-2013]	HK1318468-013	**14**				
WM3 DUPLICATE	[06-JUL-2013]	HK1318468-014	**12**				
WM3 CONTROL	[06-JUL-2013]	HK1318468-015	**11**				
WM3 CONTROL DUPLICATE	[06-JUL-2013]	HK1318468-016	**9**				
WM4	[06-JUL-2013]	HK1318468-017	**31**				
WM4 DUPLICATE	[06-JUL-2013]	HK1318468-018	**29**				
WM4 CONTROL A	[06-JUL-2013]	HK1318468-019	**26**				
WM4 CONTROL A DUPLICATE	[06-JUL-2013]	HK1318468-020	**28**				
WM4 CONTROL B	[06-JUL-2013]	HK1318468-021	**20**				
WM4 CONTROL B DUPLICATE	[06-JUL-2013]	HK1318468-022	**19**				

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: 2961538)								
HK1318273-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	27	27	0.0
HK1318468-002	WM1 DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	21	23	6.8
EA/ED: Physical and Aggregate Properties (QC Lot: 2961539)								
HK1318468-012	WM2B CONTROL DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	3	4	0.0
HK1318468-022	WM4 CONTROL B DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	19	20	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: 2961538)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	96.5	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2961539)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	97.5	----	86	112	----	----

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: **ACTION UNITED ENVIRO SERVICES**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 3**		
Contact	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1318469**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **09-JUL-2013**		
Order number	: **----**			*Date of issue*	: **15-JUL-2013**		
C-O-C number	: **H025566**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1318469 supersedes any previous reports with this reference. The completion date of analysis is 12-JUL-2013. 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 HK1318469 : 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				
WM1	[08-JUL-2013]	HK1318469-001		**26**				
WM1 DUPLICATE	[08-JUL-2013]	HK1318469-002		**28**				
WM1 CONTROL	[08-JUL-2013]	HK1318469-003		**5**				
WM1 CONTROL DUPLICATE	[08-JUL-2013]	HK1318469-004		**5**				
WM2	[08-JUL-2013]	HK1318469-005		**10**				
WM2 DUPLICATE	[08-JUL-2013]	HK1318469-006		**11**				
WM2A CONTROL	[08-JUL-2013]	HK1318469-007		**7**				
WM2A CONTROL DUPLICATE	[08-JUL-2013]	HK1318469-008		**7**				
WM2B	[08-JUL-2013]	HK1318469-009		**2**				
WM2B DUPLICATE	[08-JUL-2013]	HK1318469-010		<2				
WM2B CONTROL	[08-JUL-2013]	HK1318469-011		<2				
WM2B CONTROL DUPLICATE	[08-JUL-2013]	HK1318469-012		<2				
WM3	[08-JUL-2013]	HK1318469-013		**3**				
WM3 DUPLICATE	[08-JUL-2013]	HK1318469-014		**2**				
WM3 CONTROL	[08-JUL-2013]	HK1318469-015		**10**				
WM3 CONTROL DUPLICATE	[08-JUL-2013]	HK1318469-016		**5**				
WM4	[08-JUL-2013]	HK1318469-017		**21**				
WM4 DUPLICATE	[08-JUL-2013]	HK1318469-018		**20**				
WM4 CONTROL A	[08-JUL-2013]	HK1318469-019		**16**				
WM4 CONTROL A DUPLICATE	[08-JUL-2013]	HK1318469-020		**14**				
WM4 CONTROL B	[08-JUL-2013]	HK1318469-021		**18**				
WM4 CONTROL B DUPLICATE	[08-JUL-2013]	HK1318469-022		**19**				

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: 2963532)								
HK1318469-001	WM1	EA025: Suspended Solids (SS)	----	2	mg/L	26	26	0.0
HK1318469-011	WM2B CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2963533)								
HK1318469-022	WM4 CONTROL B DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	19	19	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: 2963532)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2963533)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	86	112	----	----

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	: **MR BEN TAM**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1318797**		
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	: **Bentam@fordbusiness.com**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 2959 6059**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 2959 6079**	*Facsimile*	: **+852 2610 2021**				
Project	: **TCS00670_13**	*Quote number*	: **HK/1291a/2009 ****	*Date received*	: **11-JUL-2013**		
Order number	: **----**			*Date of issue*	: **15-JUL-2013**		
C-O-C number	: **H025578**			*No. of samples*	- *Received* : **22**		
Site	: **----**				- *Analysed* : **22**		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1318797 supersedes any previous reports with this reference. The completion date of analysis is 12-JUL-2013. 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 HK1318797 : 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		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				
WM1	[10-JUL-2013]	HK1318797-001	**68**				
WM1 DUPLICATE	[10-JUL-2013]	HK1318797-002	**67**				
WM1 CONTROL	[10-JUL-2013]	HK1318797-003	**9**				
WM1 CONTROL DUPLICATE	[10-JUL-2013]	HK1318797-004	**8**				
WM2	[10-JUL-2013]	HK1318797-005	**10**				
WM2 DUPLICATE	[10-JUL-2013]	HK1318797-006	**9**				
WM2A CONTROL	[10-JUL-2013]	HK1318797-007	**7**				
WM2A CONTROL DUPLICATE	[10-JUL-2013]	HK1318797-008	**8**				
WM2B	[10-JUL-2013]	HK1318797-009	<2				
WM2B DUPLICATE	[10-JUL-2013]	HK1318797-010	<2				
WM2B CONTROL	[10-JUL-2013]	HK1318797-011	<2				
WM2B CONTROL DUPLICATE	[10-JUL-2013]	HK1318797-012	<2				
WM3	[10-JUL-2013]	HK1318797-013	**3**				
WM3 DUPLICATE	[10-JUL-2013]	HK1318797-014	**3**				
WM3 CONTROL	[10-JUL-2013]	HK1318797-015	**3**				
WM3 CONTROL DUPLICATE	[10-JUL-2013]	HK1318797-016	**4**				
WM4	[10-JUL-2013]	HK1318797-017	**27**				
WM4 DUPLICATE	[10-JUL-2013]	HK1318797-018	**26**				
WM4 CONTROL A	[10-JUL-2013]	HK1318797-019	**4**				
WM4 CONTROL A DUPLICATE	[10-JUL-2013]	HK1318797-020	**5**				
WM4 CONTROL B	[10-JUL-2013]	HK1318797-021	**18**				
WM4 CONTROL B DUPLICATE	[10-JUL-2013]	HK1318797-022	**16**				

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: 2963925)								
HK1318797-002	WM1 DUPLICATE	EA025: Suspended Solids (SS)	----	2	mg/L	67	66	0.0
HK1318797-011	WM2B CONTROL	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2963926)								
HK1318797-021	WM4 CONTROL B	EA025: Suspended Solids (SS)	----	2	mg/L	18	18	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: 2963925)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	86	112	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 2963926)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	94.5	----	86	112	----	----

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

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