15	30	Cŀ		7)		D	ALIBRATION UE DATE: ary 11, 2020
vir	Ce	rtifa	a I		-=	2002/02/2020	ation	
-	12 10 124		Contraction of the local division of the loc				0.97	
Cal. Date:	January 11,	2019	Rootsn	neter S/N:	438320		293	°К
Operator:	Jim Tisch					Pa:	760.7	mm Hg
Calibration	Model #:	TE-5025A	Calib	rator S/N:	0005			
		Vol. Init	Mat. Plant	avet	ATT	4.0		1
	Bun	1000000	Vol. Final	ΔVol.	∆Time (min)	ΔP	ΔH (i= μ2O)	
	Run	(m3)	(m3)	(m3)	(min) 1.4090	(mm Hg)	(in H2O)	
	1	1	2	1	the state of the s	3.2	2.00	1
	2	3	4	1	0.9980	6.4	4.00	1
	3	5	6	1	0.8900	7.8	5.00	1
	4	9	8	1	0.8450	8.7	5.50	4
	>	э	10	1	0.6990	12.6	8.00	
			D	ata Tabulat	tion			
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	Tstd)		Qa	√∆н(та/Ра)	
	(m3)	(x-axis)	(y-axis	5)	Va	(x-axis)	(y-axis)	
	1.0138	0.7195	1.426	9	0.9958	0.7067	0.8777	
	1.0095	1.0115	2.018	0	0.9916	0.9936	1.2412	
	1.0076	1.1321	2.256	1	0.9897	1.1121	1.3877	
	1,0064	1.1910	2.366	3	0.9886	1.1699	1.4555	
	1,0012	1.4323	2.853		0.9834	1.4059	1.7553	
		m=	1.998			m=	1.25149	
	QSTD	b=	-0.008		QA	b=	-0.00543	
		r=	0.999	97		r=	0.99997	
				Calculation	15			
			/Pstd)(Tstd/Ta) [∆Vol((Pa-∆i	P)/Pa)	
	Qstd=	√std/∆Time			Qa=	Va/∆Time		
			For subseque	ent flow rat	e calculation	ts:		
	Qstd=	1/т ((√Δн(-	$\frac{Pa}{Pstd}$ $\left(\frac{Tstd}{Ta}\right)$)-b)	Qa=	$1/m \left(\sqrt{\Delta F} \right)$	(Ta/Pa))-b)	
	Standard	Conditions						
Tstd:	and the second se			- E		RECA	LIBRATION	
Pstd:		mm Hg						1000
		еү					nnual recalibratio	
		er reading (in					Regulations Part !	The second s
		ter reading (mm Hg)				, Reference Meth	
and a second sec	osolute temp	essure ("K)					ended Particulati re, 9.2.17, page 1	
las actual he								

ch Environmental, Inc.

Ľ

5 South Miami Avenue

lage of Cleves, OH 45002

www.tisch-env.com TOLL FREE: (877)263-7610 FAX: (513)467-9009



Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA3a	Calbration Date	:	18-Oct-19
Equipment no.	:	HVS012	Calbration Due Date	:	18-Dec-19

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition									
Temperature, T _a		300		Kelvin	Pressure, P	a	1	017 mmHg	
	Orifice Transfer Standard Information								
Equipment No.		0005		Slope, m _c	1.998	61	Intercept, bc	-0.00882	
Last Calibration Date		11-Jan-1	9		(H x	P _a / 10	13.3 x 298 /	T _a) ^{1/2}	
Next Calibration Date		11-Jan-2	0		=	m _c :	κQ _{std} +b _c		
Calibration of TSP									
Calibration	Mar	nometer R	eading	c) _{std}	Conti	nuous Flow	IC	
Point	H (inches of water)		(m ³	/ min.)	Rec	order, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)		
	(up)	(down)	(difference)	X-	axis		(CFM)	Y-axis	
1	1.8	1.8	3.6	0.9	9523		29	28.9559	
2	2.3	2.3	4.6	1.0	0759		34	33.9483	
3	2.7	2.7	5.4	1.	1653		38	37.9422	
4	3.3	3.3	6.6	1.:	2879		44	43.9331	
5	3.7	3.7	7.4	1.:	3634		49	48.9255	
By Linear Regression of	Y on X								
	Slope, m	=	48.0	324	Int	ercept, b	= -17	7.4077	
Correlation Co	pefficient*	=	0.99	963					
Calibration	Accepted	=	Yes/ł	\o **					

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks :					
Calibrated by	:	Laurance Yung	Checked by	:	James Chu
Date	:	18-Oct-19	Date	:	18-Oct-19



Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA4a	Calbration Date	:	18-Oct-19
Equipment no.	:	HVS004	Calbration Due Date	:	18-Dec-19

CALIBRATION OF CONTINUOUS FLOW RECORDER

				Ambient C	Condition				
Temperature, T _a		300	1	Kelvin	Pressure, P	a	1	1017 mmHg	
	Orifice Transfer Standard Information								
Equipment No.		0005		Slope, m _c	1.9986	61	Intercept, bc	-0.00882	
Last Calibration Date		11-Jan-1	9		(H x	P _a / 10)13.3 x 298 /	T _a) ^{1/2}	
Next Calibration Date		11-Jan-2	0		=	m _c	x Q _{std} + b _c		
	Calibration of TSP								
Calibration	Mar	nometer Re	eading	C	Q _{std}	Conti	nuous Flow	IC	
Point	Н (і	H (inches of water)		(m ³	/ min.)	Recorder, W		$(W(P_a/1013.3x298/T_a)^{1/2}/35.31)$	
	(up)	(down)	(difference)	X-	-axis		(CFM)	Y-axis	
1	1.3	1.3	2.6	0./	8100		26	25.9605	
2	1.8	1.8	3.6	0.9	9523		31	30.9529	
3	2.6	2.6	5.2	1.	1436		36	35.9452	
4	3.2	3.2	6.4	1.:	2683		39	38.9407	
5	4.1	4.1	8.2	1./	4350		42	41.9361	
By Linear Regression of `	Y on X					_			
	Slope, m	=	25.5	089	Inte	ercept, b	=6.	1300	
Correlation Co	cefficient*	=	0.99) 31					
Calibration	Accepted	=	Yes/ I	No**					

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks :

Date

Calibrated by

: Laurance Yung

:

18-Oct-19

Checked by

Date

James Chu

:

•

18-Oct-19



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD. 香港黄竹坑道37號利進中心12種 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.

E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:	19CA0314 01		Page	1	of	2
Item tested						
Description: Manufacturer: Type/Model No.: Serial/Equipment No.: Adaptors used:	Sound Level Mete Larson Davis LxT1 0003737		Microphone PCB 377802 171529			
Item submitted by						
Customer Name: Address of Customer: Request No.: Date of receipt:	Lam Geotechnics - 14-Mar-2019	Ltd.				
Date of test:	18-Mar-2019					
Reference equipment	used in the calib	ration				
Description: Multi function sound calibrator Signal generator	Model: B&K 4226 DS 360	Serial No. 2258444 61227	Expiry Date: 23-Aug-2019 26-Dec-2019		Traceab CIGISME CEPREI	
Ambient conditions						
Temperature: Relative humidity: Air pressure:	21 ± 1 °C 55 ± 10 % 1005 ± 5 hPa					

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580; Part 1; 1997 1, and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Feng Jung

19-Mar-2019 Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

Date:

O Soits & Materials Engineering Co., Ltd.

Form No CARP152-Masue 1/Rev C/01/02/2007

Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. HOKLAS 028) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (SI) or recognised measurement standards. This certificate shall not be reproduced except in full.



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

香 進 黃 竹 坑 垣 3 7 號 利 遽 中 心 1 2 樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533

Page



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

1.

19CA0314 01

z 68

Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results. are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertanity (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	c	Pass	0.8	2.1
	Lin	Pass	1.6	2.2
Linearity range for Leg	At reference range , Step 5 dB at 4 kHz	Pass	0.3	1000 CT
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	N/A	N/A	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leg	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertanity (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

з, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

		- End -	1 1
Calibrated by:	Ela	Checked by:	1~1
Date:	Fong Chun Wai 18-Mar-2019	Date:	Fung CN Ya 19-Mar-2019

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

@ Solis & Materials Engineering Co., Ltd.

Form No CARP152-2/Islue 1/Rev C/01/02/2007

Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. HOKLAS 028) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (SI) or recognised measurement standards. This certificate shall not be reproduced except in full.



综合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD. 香港黃竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:	19CA1024 01		Page:	1 of 2
Item tested				
Description:	Acoustical Calibr	ator (Class 1)		
Manufacturer:	Larson Davis	, ,		
Type/Model No.:	CAL200			
Serial/Equipment No.:	13098			
Adaptors used:	-			
Item submitted by				
Curstomer:	Lam Geotechnics	s Limited.		
Address of Customer:	-			
Request No.:	-			
Date of receipt:	24-Oct-2019			
Date of test:	24-Oct-2019			
Reference equipment	used in the cali	bration		
Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	03-May-2020	SCL
Preamplifier	B&K 2673	2239857	17-May-2020	CEPREI
Measuring amplifier	B&K 2610	2346941	05-Jun-2020	CEPREI
Signal generator	DS 360	33873	10-May-2020	CEPREI
Digital multi-meter	34401A	US36087050	08-May-2020	CEPREI
Audio analyzer	8903B	GB41300350	13-May-2020	CEPREI
Universal counter	53132A	MY40003662	10-May-2020	CEPREI

Temperature:	22 ± 1 °C
Relative humidity:	55 ± 10 %
Air pressure:	1000 + 5 hPa

Test specifications

- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

© Soils & Materials Engineering Co., Ltd.

Form No.CARP156-1/Issue 1/Rev D/01/03/2007



综合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD. 香港黃竹坑道37號利達中心12樓 12/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

(Continuation Page)

 Certificate No.:
 19CA1024 01
 Page:
 2
 of
 2

Website: www.cigismec.com

1, Measured Sound Pressure Level

E-mail: smec@cigismec.com

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency	Output Sound Pressure	Measured Output	Estimated Expanded
Shown	Level Setting	Sound Pressure Level	Uncertainty
Hz	dB	dB	dB
1000	94.00	93.98	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 100	0 Hz			STF = 0.013 dB

Estimated expanded uncertainty

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

0.005 dB

At 1000 Hz	Actual Frequency = 999.8 Hz	
Estimated expanded uncertainty	0.1 Hz	Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz	TND = 0.5%
Estimated expanded uncertainty	0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

1	- End -	Jan 1	
$1 \sim 1$	Checked by:	And	
Fung Chi Yip		Shek Kwong Tat	
24-Oct-2019	Date:	26-Oct-2019	
		Fung Chi Yip	Fung Chi Yip

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

© Soils & Materials Engineering Co., Ltd.

Form No.CARP156-2/Issue 1/Rev.C/01/05/2005

Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. HOKLAS 028) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (SI) or recognised measurement standards. This certificate shall not be reproduced except in full.



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: CLIENT:	CHAN KA CHUN LAM ENVIRONMENTAL SERVICES LTD	WORK ORDER:	HK1945646
ADDRESS:	11/F CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 23-Oct-2019 01-Nov-2019

COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test:Dissolved Oxygen, pH Value, Salinity and TemperatureEquipment Type:Multifunctional MeterBrand Name/ Model No.:YSI Professional Plus

Serial No./ Equipment No.:17F100236Date of Calibration:01-Nov-2019

<u>NOTES</u>

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.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

WORK ORDER:	HK1945646			A
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 01-Nov-2019 LAM ENVIRONMENTAL SERVIC	ES LTD		
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	YSI Professional Plus			
Serial No./ Equipment No.:	17F100236			
Date of Calibration:	01-Nov-2019	Date of Next Calibration:	01-Feb-2020	

PARAMETERS:

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
7.76	7.87	+0.11
5.78	5.75	-0.03
3.84	3.69	-0.15
	Tolerance Limit (mg/L)	±0.20

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.14	+0.14
7.0	6.94	-0.06
10.0	10.15	+0.15
	Tolerance Limit (pH unit)	±0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	9.94	-0.6
20	19.53	-2.3
30	30.33	+1.1
	Tolerance Limit (%)	±10.0

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

1:5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

WORK ORDER:	HK1945646			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 01-Nov-2019 LAM ENVIRONMENTAL SERVIC	ES LTD		
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	YSI Professional Plus			
Serial No./ Equipment No.:	17F100236			
Date of Calibration:	01-Nov-2019	Date of Next Calibration:	01-Feb-2020	

PARAMETERS:

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	9.7	+0.7
25.0	23.8	-1.2
38.0	36.6	-1.4
	Tolerance Limit (°C)	±2.0

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

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

CONTACT: CLIENT:	CHAN KA CHUN LAM ENVIRONMENTAL SERVICES LTD	WORK ORDER:	HK1941420
ADDRESS:	11/F CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	SUB- BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 25-Sep-2019 08-Oct-2019

COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test:Dissolved Oxygen, pH Value, Salinity and TemperatureEquipment Type:Multifunctional MeterBrand Name/ Model No.:YSI/ Professional PlusSerial No./ Equipment No.:14E100105

08-Oct-2019

<u>NOTES</u>

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.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Date of Calibration:

WORK ORDER:	HK1941420		
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 08-Oct-2019 LAM ENVIRONMENTAL SERVIC	ES LTD	
Equipment Type:	Multifunctional Meter		
Brand Name/ Model No.:	YSI/ Professional Plus		
Serial No./ Equipment No.:	14E100105		
Date of Calibration:	08-Oct-2019	Date of Next Calibration:	08-Jan-2020

PARAMETERS:

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

Expected Reading (mg/ L)	Displayed Reading (mg/ L)	Tolerance (mg/ L)
7.43	7.40	-0.03
5.23	5.09	-0.14
4.19	4.07	-0.12
	Tolerance Limit (mg/L)	±0.20

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)	
4.0	4.01	+0.01	
7.0	7.12	+0.12	
10.0	10.12	+0.12	
	Tolerance Limit (pH unit)	±0.20	

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	10.12	+1.2
20	19.76	-1.2
30	28.76	-4.1
	Tolerance Limit (%)	±10.0

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

1:5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

WORK ORDER:	HK1941420			ALS
SUB- BATCH: DATE OF ISSUE: CLIENT:	0 08-Oct-2019 LAM ENVIRONMENTAL SERVICE	ES LTD		
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	YSI/ Professional Plus			
Serial No./ Equipment No.:	14E100105			
Date of Calibration:	08-Oct-2019	Date of Next Calibration:	08-Jan-2020	

PARAMETERS:

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)
8.0	7.4	-0.6
25.5	25.1	-0.4
38.0	36.3	-1.7
	Tolerance Limit (°C)	±2.0

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

; 5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic



Information supplied	by customer:		
CONTACT:	MR. CHAN KA CHUN	JOB REFERENCE NO .:	22787053-K09V4101
CLIENT:	LAM GEOTECHNICS LTD.		
DATE RECEIVED:	09/10/2019		
DATE OF ISSUE:	10/10/2019		
ADDRESS:	11/F, CENTRE POINT, 181-185,	GLOUCESTER ROAD,	
	WANCHAI, HONG KONG		
PROJECT:	19 17.		

METHOD OF PERFORMANCE CHECK/ CALIBRATION: Parts APPLA 22 and ad 21200

Ref: APHA22nd ed 2130B

COMMENTS

It is certified that the item under performance check/calibration 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 acceptance criteria of FT Laboratories Ltd will be followed.

Scope of Test:	Turbidity	
Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1807077	
Equipment No.:	***	
Date of Calibration:	10/10/2019	

Remarks:

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

Certified By:

Anymm Rowena R De Jesus

Issue Date:

10/10/2019

This report may not be reproduced except with prior written approval from FT Laboratories Ltd. Form No.: HG022-002 Rev 0 20190101

Page | of 2

Senior Chemist



WORK ORDER:	22787053-K09V4101
DATE OF ISSUE:	10/10/2019
CLIENT:	LAM GEOTECHNICS LTD.

Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1807077	
Equipment No.:		
Date of Calibration:	10/10/2019	
Date of next Calibation:	09/01/2020	
Lab ID:	H190307-01	

Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance	
0	0.00		
4	3.84	-4.0%	
10	10.02	0.2%	
40	38.14	-4.7%	
100	100.50	0.5%	
400	401	0.2%	
1000	997	-0.4%	
	Tolerance Limit (±)	10%	

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



Information supplied	by customer:		
CONTACT:	MR. CHAN KA CHUN	JOB REFERENCE NO.:	22777053-K09V4201
CLIENT:	LAM ENVIRONMENTAL SERVICES LTD.		
DATE RECEIVED:	09/10/2019		
DATE OF ISSUE:	10/10/2019		
ADDRESS:	11/F, CENTRE POINT, 181-185, G	LOUCESTER ROAD,	
	WANCHAI, HONG KONG		
PROJECT:			

METHOD OF PERFORMANCE CHECK/ CALIBRATION: Ref: APHA22nd ed 2130B

COMMENTS

It is certified that the item under performance check/calibration 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 acceptance criteria of FT Laboratories Ltd will be followed.

Scope of Test:	Turbidity	
Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1807079	
Equipment No.:		
Date of Calibration:	10/10/2019	
Damanka		

Remarks:

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

Certified By:

Polyou

Rowena R De Jesus Senior Chemist Issue Date:

10/10/2019

This report may not be reproduced except with prior written approval from FT Laboratories Ltd. Form No.: HG022-002 Rev 0 20190101

Page 1 of 2



WORK ORDER:	22777053-K09V4201
DATE OF ISSUE:	10/10/2019
CLIENT:	LAM ENVIRONMENTAL SERVICES LTD.

Equipment Type:	Turbidimeter	
Brand Name:	Xin Rui	
Model No.:	WGZ-3B	
Serial No.:	1807079	
Equipment No.:		
Date of Calibration:	10/10/2019	
Date of next Calibation:	09/01/2020	
Lab ID:	H190308-01	

Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance	
0	0.00		
4	3.87	-3.3%	
10	10.05	0.5%	
40	37.60	-6.0%	
100	100.30	0.3%	
400	401	0.1%	
1000	998	-0.2%	
	Tolerance Limit (±)	10%	

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

This report may not be reproduced except with prior written approval from FT Laboratories Ltd. Form No.: HG022-002 Rev 0 20190101