Appendix E

Copies of
Calibration
Certificates for Air
and Water Quality
Monitoring

Location : ASR 5
Calibrated by : P.F.Yeung
Date : 08/06/2019

Sampler

Model : TE-5170 Serial Number : S/N 0816

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008 Ta(K) : 304

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.2	3.450	1.680	56	55.31
2	13 holes	9.2	2.996	1.461	50	49.38
3	10 holes	7.0	2.613	1.276	45	44.44
4	7 holes	4.8	2.164	1.059	38	37.53
5	5 holes	2.5	1.562	0.768	28	27.65

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : ASR10
Calibrated by : P.F.Yeung
Date : 08/06/2019

Sampler

Model : TE-5170 Serial Number : S/N 8162

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008 Ta(K) : 304

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	11.2	3.305	1.610	55	54.32
2	13 holes	9.4	3.028	1.476	50	49.38
3	10 holes	6.6	2.537	1.239	45	44.44
4	7 holes	4.2	2.024	0.992	38	37.53
5	5 holes	2.6	1.593	0.783	30	29.63

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : AQMS1
Calibrated by : P.F.Yeung
Date : 08/06/2019

Sampler

 Model
 :
 TE-5170

 Serial Number
 :
 S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008 Ta(K) : 304

Resi	stance Plate	dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	1 18 holes 12.0		3.421	1.666	55	54.32
2	13 holes	9.2	2.996	1.461	50	49.38
3	10 holes	6.6	2.537	1.239	44	43.46
4	7 holes	4.5	2.095	1.026	37	36.54
5	5 holes	2.4	1.530	0.753	28	27.65

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : ASR 1
Calibrated by : P.F.Yeung
Date : 08/06/2019

Sampler

Model : TE-5170 Serial Number : S/N 0146

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008 Ta(K) : 304

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	11.0	3.276	1.596	54	53.33
2	13 holes	9.0	2.963	1.445	49	48.39
3	10 holes	6.8	2.575	1.258	43	42.47
4	7 holes	4.2	2.024	0.992	36	35.55
5	5 holes	2.8	1.653	0.812	28	27.65

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):31.662 Intercept(b):2.838 Correlation Coefficient(r): 0.9969

High-Volume TSP Sampler 5-Point Calibration Record

Location : ASR 6
Calibrated by : P.F.Yeung
Date : 08/06/2019

Sampler

 Model
 :
 TE-5170

 Serial Number
 :
 S/N 3957

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008 Ta(K) : 304

Resi	stance Plate	dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.0	3.421	1.666	56	55.31
2	13 holes	9.2	2.996	1.461	51	50.37
3	10 holes	7.6	2.723	1.329	45	44.44
4	7 holes	4.5	2.095	1.026	37	36.54
5	5 holes	2.8	1.653	0.812	30	29.63

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : ASR 5
Calibrated by : P.F.Yeung
Date : 08/08/2019

Sampler

Model : TE-5170 Serial Number : S/N 0816

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004 Ta(K) : 303

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.2	3.448	1.679	56	55.29
2	13 holes	9.4	3.027	1.476	51	50.35
3	10 holes	7.2	2.649	1.293	46	45.42
4	7 holes	4.6	2.118	1.037	38	37.52
5	5 holes	2.5	1.561	0.768	30	29.62

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : ASR10
Calibrated by : P.F.Yeung
Date : 08/08/2019

Sampler

Model : TE-5170 Serial Number : S/N 8162

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004 Ta(K) : 303

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	11.4	3.334	1.624	54	53.31
2	13 holes	9.2	2.995	1.460	50	49.37
3	10 holes	6.5	2.517	1.230	45	44.43
4	7 holes	4.4	2.071	1.014	37	36.53
5	5 holes	2.5	1.561	0.768	30	29.62

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : AQMS1
Calibrated by : P.F.Yeung
Date : 08/08/2019

Sampler

 Model
 :
 TE-5170

 Serial Number
 :
 S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004 Ta(K) : 303

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.0	3.420	1.666	56	55.29
2	13 holes	9.4	3.027	1.476	50	49.37
3	10 holes	6.5	2.517	1.230	45	44.43
4	7 holes	4.4	2.071	1.014	38	37.52
5	5 holes	2.6	1.592	0.783	30	29.62

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, \ X = Z/m-b \ , Y(Corrected \ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Location : ASR 1
Calibrated by : P.F.Yeung
Date : 08/08/2019

Sampler

Model : TE-5170 Serial Number : S/N 0146

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004 Ta(K) : 303

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	11.6	3.363	1.638	52	51.34
2	13 holes	9.0	2.962	1.444	48	47.39
3	10 holes	6.6	2.536	1.239	41	40.48
4	7 holes	4.4	2.071	1.014	35	34.56
5	5 holes	2.6	1.592	0.783	27	26.66

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):<u>29.118</u> Intercept(b):<u>4.454</u> Correlation Coefficient(r): <u>0.9973</u>

High-Volume TSP Sampler 5-Point Calibration Record

Location : ASR 6
Calibrated by : P.F.Yeung
Date : 08/08/2019

Sampler

Model : TE-5170 Serial Number : S/N 3957

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454

Service Date : 25 February 2019

 Slope (m)
 : 2.07076

 Intercept (b)
 : -0.02917

 Correlation Coefficient(r)
 : 1.00000

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004 Ta(K) : 303

Resi	stance Plate	dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.0	3.420	1.666	55	54.30
2	13 holes	9.2	2.995	1.460	50	49.37
3	10 holes	7.0	2.612	1.276	45	44.43
4	7 holes	4.6	2.118	1.037	38	37.52
5	5 holes	2.8	1.652	0.812	30	29.62

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, X = Z/m-b, Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): <u>28.794</u> Intercept(b): <u>7.053</u> Correlation Coefficient(r): <u>0.9973</u>



RECALIBRATION
DUE DATE:

February 25, 2020

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 25, 2019

Rootsmeter S/N: 438320

Ta: 294

°K

Operator: Jim Tisch

Pa: 762.0

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 2454

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4400	3.2	2.00
2	3	4	1	1.0200	6.4	4.00
3	5	6	1	0.9120	7.9	5.00
4	7	8	1	0.8700	8.8	5.50
5	9	10	1	0.7180	12.8	8.00

Data Tabulation								
Vstd Qstd (m3) (x-axis)		$ \sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)} $ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\text{Ta/Pa} \right)}$ (y-axis)			
1.0120	0.7028	1.4257	0.9958	0.6915	0.8784			
1.0077	0.9880	2.0162	0.9916	0.9722	1.2423			
1.0057	1.1028	2.2542	0.9896	1.0851	1.3889			
1.0045	1.1546	2.3642	0.9885	1.1362	1.4567			
0.9992	1.3916	2.8513	0.9832	1.3694	1.7569			
	m= 2.07076			m= 1.29667				
QSTD	b=	-0.02917	QA	b=	-0.01797			
QUID	r=	1.00000		r=	1.00000			

	Calculation	s	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va= ΔVol((Pa-ΔP)/Pa)	
Qstd=	Vstd/∆Time	Qa= Va/ΔTime	
	For subsequent flow rat	e calculations:	
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa= 1/m ((√ΔH(Ta/Pa	a))-b)

	Standard Conditions
Tstd:	298.15 °K
Pstd:	760 mm Hg
	Key
ΔH: calibrator	manometer reading (in H2O)
ΔP: rootsmete	er manometer reading (mm Hg)
Ta: actual abs	olute temperature (°K)
Pa: actual bar	ometric pressure (mm Hg)
b: intercept	
m: clone	

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009



輝創工程有限公司

Sun Creation Engineering Limited Calibration & Testing Laboratory

Certificate of Calibration

Certificate No.: C184960

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC18-1761)

Date of Receipt / 收件日期: 23 August 2018

Description / 儀器名稱 :

Anemometer

Manufacturer / 製造商

Lutron

Model No. / 型號

AM-4201

Serial No./編號 Supplied By / 委託者

AF.27513

Envirotech Services Co.

Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,

New Territories, Hong Kong

TEST CONDITIONS/測試條件

Temperature / 溫度 :

Relative Humidity / 相對濕度 : $(50 \pm 25)\%$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期

5 September 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- Testo Industrial Services GmbH, Germany

Tested By

測試

T L Shek

Certified By

核證

Tel/電話: (852) 2927 2606

Assistant Engineer

Date of Issue 簽發日期

6 September 2018

Engineer

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Fax/傳真: (852) 2744 8986



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C184960

證書編號

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 10 measurements at each calibration point.

3. Test equipment:

CL386

Equipment ID

Description

Multi-function Measuring Instrument

Certificate No.

S16493

4. Test procedure: MA130N.

5. Results:

Air Velocity

Applied Value	UUT	Measured Correction		
	Reading	Value Measurement Uncertainty		ertainty
(m/s)	(m/s)	(m/s)	Expanded Uncertainty (m/s)	Coverage Factor
2.0	1.7	+0.3	0.2	2.0
4.0	3.8	+0.2	0.3	2.0
6.0	5.8	+0.2	0.3	2.0
8.0	7.9	+0.1	0.3	2.0
10.0	10.0	0.0	0.4	2.0

Remarks: - The Measured Corrections are defined as: Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

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.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

ENVIROTECH SERVICES CO.

Calibration Report of Wind Meter

Date of Calibration :	19 February 2019	
Brand of Test Meter:	Davis	
Model:	Vantage Pro 2 (s/n: AS160104014)	
Location:	Roof of Tuen Mun Firestation	
Procedures:		
1. Wind Still Test:	The wind speed sensor was hold by hand un	til it keep still
2.Wind Speed Test:	The wind meter was on-site calibrated again	st the Anemometer
3.Wind Direction Test:	The wind meter was on-site calibrated again	st the marine compass at four directions
Results:		
Wind Still Test		
	Wind Speed (m/s)	
	0.00	
Wind Speed Test		
	Davis (m/s)	Anemometer (m/s)
	1.5	1.3
	2.6	2.9
	3.3	3.5

Wind Direction Test

Davis (o)	Marine Compass (o)	
271	270	
0	0	
91	90	
180	180	

Calibrated by: Checked by : Fact

Yeung Ping Fai

(Technical Officer) Checked by : Fact

Ho Kam Fat

(Senior Technical Officer)

ENVIROTECH SERVICES CO.

Calibration Report of Wind Meter

Date of Calibration :	15 August 2019	
Brand of Test Meter:	Davis	
Model:	Vantage Pro 2 (s/n: AS160104014)	
Location:	Roof of Tuen Mun Firestation	
Procedures:		
1. Wind Still Test:	The wind speed sensor was hold by hand un	til it keep still
2.Wind Speed Test:	The wind meter was on-site calibrated again	ast the Anemometer
3.Wind Direction Test :	The wind meter was on-site calibrated again	ast the marine compass at four directions
Results:		
Wind Still Test		
	Wind Speed (m/s)	
	0.00	
Wind Speed Test		
	Davis (m/s)	Anemometer (m/s)

Wind Direction Test

3.3

2.8

1.1

Davis (o)	Marine Compass (o)
270	270
0	0
89	90
181	180

3.7

2.41.2

Calibrated by:

Yeung Ping Fai

(Technical Officer)

Checked by:

Ho Kam Fat

(Senior Technical Officer)



Report No.

AI060143

Date of Issue

25 June, 2019

Page No.

1 of 2

PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd. Flat 2207, Yu Fun House, Yu Chui Court, Shatin New Territories, Hong Kong Attn: Mr. Thomas WONG

PART B - DESCRIPTION

Name of Equipment

YSI ProDSS (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

17E100747

Date of Received

Jun 25, 2019

Date of Calibration

Jun 25, 2019

Date of Next Calibration^(a)

Sep 25, 2019

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter

Reference Method

pH at 25°C

APHA 21e 4500-H⁺ B APHA 21e 4500-O G

Dissolved Oxygen Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B

Turbidity

APHA 21e 2130 B

Temperature

Section 6 of international Accreditation New Zealand Technical

Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D - CALIBRATION RESULTS(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.41	-0.01	Satisfactory
10.01	10.03	0.02	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer	Displayed Reading (°C)	Tolerance (°C)	Results
15.0	15.2	0.2	Satisfactory
30.0	30.0	0.0	Satisfactory
48.0	47.9	-0.1	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

(b) The results relate only to the calibrated equipment as received

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

(d) "Displayed Reading" denotes the figure shown on item under calibration/checking regardless of equipment precision or significant figures.

(e) The "Tolerance Limit" mentioned is referenced to YSI product specifications.

APPROVED SIGNATORY:

LAM Ho-yee, Emma Assistant Laboratory Manager



專業化驗有限公司 **QUALITY PRO TEST-CONSULT LIMITED**

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong Email: info@qualityprotest.com; Website: www.qualityprotest.com Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No.

AI060143

Date of Issue

25 June, 2019

Page No.

: 2 of 2

PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.45	0.03	-0.42	Satisfactory
2.84	3.26	0.42	Satisfactory
5.21	5.29	0.08	Satisfactory
8.03	7.64	-0.39	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	145.1	-1.2	Satisfactory
0.01	1412	1402	-0.7	Satisfactory
0.1	12890	12921	0.2	Satisfactory
0.5	58670	56719	-3.3	Satisfactory
1.0	111900	111688	-0.2	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.96	-0.4	Satisfactory
20	20.13	0.6	Satisfactory
30	30.00	0.0	Satisfactory

Tolerance limit of salinity should be less than ±10.0 (%)

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.01		Satisfactory
10	10.05	0.5	Satisfactory
20	20.12	0.6	Satisfactory
100	100.90	0.9	Satisfactory
800	805.40	0.7	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

[&]quot;Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.



Report No.

AI060144

Date of Issue

25 June, 2019

Page No.

1 of 2

PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd. Flat 2207, Yu Fun House, Yu Chui Court, Shatin New Territories, Hong Kong

Attn: Mr. Thomas WONG

PART B - DESCRIPTION

Name of Equipment

YSI ProDSS (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

15M100005

Date of Received

Jun 25, 2019

Jun 25, 2019

Date of Calibration Date of Next Calibration(a)

Sep 25, 2019

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter

Reference Method

pH at 25°C

APHA 21e 4500-H+ B

Dissolved Oxygen Conductivity at 25°C APHA 21e 4500-O G APHA 21e 2510 B

Salinity

APHA 21e 2520 B

Turbidity

APHA 21e 2130 B

Temperature

Section 6 of international Accreditation New Zealand Technical

Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D - CALIBRATION RESULTS(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading(d) (pH Unit)	Tolerance(e)(pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.01	0.00	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer	Displayed Reading (°C)	Tolerance (°C)	Results
15.0	15.1	0.1	Satisfactory
30.0	29.8	-0.2	Satisfactory
48.0	48.1	0.1	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

The results relate only to the calibrated equipment as received

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

"Displayed Reading" denotes the figure shown on item under calibration/checking regardless of equipment precision or significant figures.

The "Tolerance Limit" mentioned is referenced to YSI product specifications.

APPROVED SIGNATORY:

LAM Ho-yee, Emma Assistant Laboratory Manager



Report No.

AI060144

Date of Issue

25 June, 2019

Page No.

: 2 of 2

PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.45	0.03	-0.42	Satisfactory
2.88	3.26	0.38	Satisfactory
5.23	5.29	0.06	Satisfactory
8.12	7.64	-0.48	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	142.8	-2.8	Satisfactory
0.01	1412	1398	-1.0	Satisfactory
0.1	12890	12934	0.3	Satisfactory
0.5	58670	56361	-3.9	Satisfactory
1.0	111900	111597	-0.3	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.94	-0.6	Satisfactory
20	20.00	0.0	Satisfactory
30	30.14	0.5	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.00	##X	
10	10.07	0.7	Satisfactory
20	20.11	0.5	Satisfactory
100	101.20	1.2	Satisfactory
800	804.30	0.5	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

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

⁽b) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.



Report No.

AI070143

Date of Issue

25 July, 2019

Page No.

1 of 2

PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd.

Flat 2207, Yu Fun House, Yu Chui Court, Shatin New Territories, Hong Kong Attn: Mr. Thomas WONG

PART B - DESCRIPTION

Name of Equipment

: YSI 6920V2 (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number
Date of Received

0001C6A7

Date of Received

Jul 24, 2019

Date of Calibration

Jul 24, 2019

Date of Next Calibration(a)

Oct 24, 2019

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

ParameterReference MethodpH at 25°CAPHA 21e 4500-H* BDissolved OxygenAPHA 21e 4500-O GConductivity at 25°CAPHA 21e 2510 BSalinityAPHA 21e 2520 BTurbidityAPHA 21e 2130 B

Turbidity Temperature

Section 6 of international Accreditation New Zealand Technical

Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D - CALIBRATION RESULTS(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.08	0.08	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.05	0.04	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
23.0	23.32	0.32	Satisfactory
28.0	27.65	-0.35	Satisfactory
48.0	49.6	1.6	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

(6) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

(b) The results relate only to the calibrated equipment as received

(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

"Displayed Reading" denotes the figure shown on item under calibration/checking regardless of equipment precision or significant figures.

(e) The "Tolerance Limit" mentioned is referenced to YSI product specifications.

LEE Chun-ning, Desmond Senior Chemist



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Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong Email: info@qualityprotest.com; Website: www.qualityprotest.com Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No.

AI070143

Date of Issue

: 25 July, 2019

Page No.

: 2 of 2

PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.02	0.48	0.46	Satisfactory
3.66	3.50	-0.16	Satisfactory
5.70	5.78	0.08	Satisfactory
7.64	7.49	-0.15	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	140.2	-4.56	Satisfactory
0.01	1412	1386	-1.84	Satisfactory
0.1	12890	12742	-1.15	Satisfactory
0.5	58670	56780	-3.22	Satisfactory
1.0	111900	107432	-3.99	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.95	-0.50	Satisfactory
20	19.95	-0.25	Satisfactory
30	30.04	0.13	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.1		Satisfactory
10	9.8	-2.0	Satisfactory
20	19.4	-3.0	Satisfactory
100	97.2	-2.8	Satisfactory
800	776.3	-3.0	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

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專業化驗有限公司 **QUALITY PRO TEST-CONSULT LIMITED**

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No.

AI080035

Date of Issue

06 Aug, 2019

Page No.

1 of 2

PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd. Flat 2207, Yu Fun House, Yu Chui Court, Shatin New Territories, Hong Kong Attn: Mr. Thomas WONG

PART B - DESCRIPTION

Name of Equipment

YSI 6920V2 (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

18A104824

Aug 02, 2019

Date of Received

Date of Calibration

Aug 02, 2019

Date of Next Calibration(a)

Nov 02, 2019

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>

Reference Method

pH at 25°C

APHA 21e 4500-H+ B APHA 21e 4500-O G

Dissolved Oxygen Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B

Turbidity

APHA 21e 2130 B

Temperature

Section 6 of international Accreditation New Zealand Technical

Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D - CALIBRATION RESULTS(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading(d) (pH Unit)	Tolerance(e)(pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	10.00	-0.01	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer	Displayed Reading (°C)	Tolerance (°C)	Results
11.5	11.4	-0.1	Satisfactory
26.0	25.9	-0.1	Satisfactory
51.5	52.0	0.5	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

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Remark(s): -

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

The results relate only to the calibrated equipment as received

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

"Displayed Reading" denotes the figure shown on item under calibration/checking regardless of equipment precision or significant figures.

The "Tolerance Limit" mentioned is referenced to YSI product specifications.

LEE Chun-ning, Desmond Senior Chemist



Report No.

AI080035

Date of Issue

06 Aug, 2019

Page No.

2 of 2

PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.01	0.26	0.25	Satisfactory
1.68	1.82	0.14	Satisfactory
4.52	4.83	0.21	Satisfactory
7.84	8.04	0.20	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	144.3	-1.8	Satisfactory
0.01	1412	1394	-1.3	Satisfactory
0.1	12890	12677	-1.7	Satisfactory
0.5	58670	58642	0.0	Satisfactory
1.0	111900	112012	0.1	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.06	0.6	Satisfactory
20	20.22	1.1	Satisfactory
30	30.17	0.6	Satisfactory

Tolerance limit of salinity should be less than ±10.0 (%)

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.01	<u> </u>	Satisfactory
10	10.04	0.4	Satisfactory
20	20.09	0.4	Satisfactory
100	100.19	0.2	Satisfactory
800	801.44	0.2	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

⁽Displayed Reading) presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

⁽⁸⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No.

AI080036

Date of Issue

06 Aug, 2019

Page No.

1 of 2

PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd.

Flat 2207, Yu Fun House,

Yu Chui Court, Shatin

New Territories, Hong Kong

Attn: Mr. Thomas WONG

PART B - DESCRIPTION

Name of Equipment

YSI 6920V2 (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

Date of Received

17H105557

Date of Calibration

Aug 02, 2019

Aug 02, 2019

Date of Next Calibration(a)

Nov 02, 2019

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter

Reference Method

pH at 25°C Dissolved Oxygen APHA 21e 4500-H+ B APHA 21e 4500-O G

Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B

Turbidity Temperature APHA 21e 2130 B Section 6 of international Accreditation New Zealand Technical

Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D - CALIBRATION RESULTS(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.98	-0.02	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.01	0.00	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
11.5	11.3	-0.2	Satisfactory
26.0	25.9	-0.1	Satisfactory
51.5	52.0	0.5	Satisfactory

Tolerance limit of temperature should be less than ± 2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

The results relate only to the calibrated equipment as received

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

The "Tolerance Limit" mentioned is referenced to YSI product specifications.

LEE Chun-ning, Desmond Senior Chemist



Report No.

AI080036

Date of Issue

06 Aug, 2019

Page No.

2 of 2

PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.01	0.27	0.26	Satisfactory
1.68	1.75	0.07	Satisfactory
4.52	4.81	0.29	Satisfactory
7.84	8.00	0.16	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	152.6	3.9	Satisfactory
0.01	1412	1389	-1.6	Satisfactory
0.1	12890	12452	-3.4	Satisfactory
0.5	58670	58588	-0.1	Satisfactory
1.0	111900	111882	0.0	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.08	0.8	Satisfactory
20	20.35	1.8	Satisfactory
30	30.00	0.0	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.00	==	Satisfactory
10	10.03	0.3	Satisfactory
20	20.11	0.5	Satisfactory
100	100.07	0.1	Satisfactory
800	800.35	0.0	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

Remark(s): -

relevant international standards.

[&]quot;Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

(b) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form