

Appendix E

Copies of
Calibration
Certificates for Air
Quality
Monitoring and
Water Quality
Monitoring

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 5
 Calibrated by : K.T.Ho
 Date : 07/12/2020

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 18 February 2020
 Slope (m) : 2.07134
 Intercept (b) : -0.04091
 Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.2	3.387	1.655	64	64.77
2 13 holes	9.2	3.069	1.502	58	58.69
3 10 holes	6.8	2.639	1.294	52	52.62
4 7 holes	4.5	2.147	1.056	45	45.54
5 5 holes	2.5	1.600	0.792	35	35.42

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 33.108 Intercept(b): 9.702 Correlation Coefficient(r): 0.9984

Checked by: Magnum Fan

Date: 11/12/2020

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR10
 Calibrated by : K.T.Ho
 Date : 07/12/2020

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 18 February 2020
 Slope (m) : 2.07134
 Intercept (b) : -0.04091
 Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.0	3.506	1.712	60	60.7
2 13 holes	9.4	3.103	1.518	53	53.6
3 10 holes	6.8	2.639	1.294	46	46.6
4 7 holes	4.6	2.170	1.068	38	38.5
5 5 holes	2.4	1.568	0.777	30	30.4

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.593 Intercept(b): 4.434 Correlation Coefficient(r): 0.9989

Checked by: Magnum Fan

Date: 11/12/2020

High-Volume TSP Sampler
5-Point Calibration Record

Location : AQMS1
 Calibrated by : K.T.Ho
 Date : 07/12/2020

Sampler

Model : TE-5170
 Serial Number : S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 18 February 2020
 Slope (m) : 2.07134
 Intercept (b) : -0.04091
 Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.8	3.476	1.698	56	56.67
2 13 holes	9.2	3.069	1.502	51	51.61
3 10 holes	6.8	2.639	1.294	45	45.54
4 7 holes	4.6	2.170	1.068	38	38.46
5 5 holes	2.4	1.568	0.777	30	30.36

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 28.905

Intercept(b): 7.890

Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan

Date: 11/12/2020

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 1
 Calibrated by : K.T.Ho
 Date : 07/12/2020

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 18 February 2020
 Slope (m) : 2.07134
 Intercept (b) : -0.04091
 Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	12.0	3.506	1.712	58	58.69
2 13 holes	9.4	3.103	1.518	52	52.62
3 10 holes	6.7	2.619	1.284	44	44.53
4 7 holes	4.5	2.147	1.056	37	37.44
5 5 holes	2.4	1.568	0.777	30	30.36

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 30.712 Intercept(b): 5.744 Correlation Coefficient(r): 0.9983

Checked by: Magnum Fan

Date: 11/12/2020

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 6
 Calibrated by : K.T.Ho
 Date : 07/12/2020

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 18 February 2020
 Slope (m) : 2.07134
 Intercept (b) : -0.04091
 Correlation Coefficient(r) : 0.99999

Standard Condition

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

Calibration Condition

Pa (hpa) : 1020
 Ta(K) : 293

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.0	3.356	1.640	58	58.69
2 13 holes	9.0	3.036	1.485	52	52.62
3 10 holes	6.8	2.639	1.294	45	45.54
4 7 holes	4.3	2.098	1.033	37	37.44
5 5 holes	2.5	1.600	0.792	29	29.35

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 34.743 Intercept(b): 1.963 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 11/12/2020

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 5
 Calibrated by : K.T.Ho
 Date : 07/02/2021

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 28 January 2021
 Slope (m) : 2.06072
 Intercept (b) : -0.01465
 Correlation Coefficient(r) : 0.99993

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 294

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.8	3.318	1.617	56	56.55
2 13 holes	8.6	2.961	1.444	51	51.50
3 10 holes	6.2	2.514	1.227	45	45.44
4 7 holes	4.0	2.020	0.987	37	37.36
5 5 holes	2.4	1.564	0.766	28	28.27

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.819 Intercept(b): 4.165 Correlation Coefficient(r): 0.9968

Checked by: Magnum Fan

Date: 11/02/2021

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR10
 Calibrated by : K.T.Ho
 Date : 07/02/2021

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 28 January 2021
 Slope (m) : 2.06072
 Intercept (b) : -0.01465
 Correlation Coefficient(r) : 0.99993

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 294

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.6	3.439	1.676	59	59.6
2 13 holes	9.3	3.079	1.501	53	53.5
3 10 holes	7.0	2.672	1.304	46	46.4
4 7 holes	4.6	2.166	1.058	38	38.4
5 5 holes	2.8	1.690	0.827	28	28.3

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 36.361 Intercept(b): -1.058 Correlation Coefficient(r): 0.9987

Checked by: Magnum Fan

Date: 11/02/2021

High-Volume TSP Sampler
5-Point Calibration Record

Location : AQMS1
 Calibrated by : K.T.Ho
 Date : 07/02/2021

Sampler

Model : TE-5170
 Serial Number : S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 28 January 2021
 Slope (m) : 2.06072
 Intercept (b) : -0.01465
 Correlation Coefficient(r) : 0.99993

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 294

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.6	3.439	1.676	55	55.54
2 13 holes	9.2	3.063	1.493	50	50.49
3 10 holes	6.7	2.614	1.275	44	44.43
4 7 holes	4.6	2.166	1.058	37	37.36
5 5 holes	2.4	1.564	0.766	28	28.27

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 30.072 Intercept(b): 5.512 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 11/02/2021

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 1
 Calibrated by : K.T.Ho
 Date : 07/02/2021

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 28 January 2021
 Slope (m) : 2.06072
 Intercept (b) : -0.01465
 Correlation Coefficient(r) : 0.99993

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 294

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	10.2	3.225	1.572	56	56.55
2 13 holes	8.0	2.856	1.393	49	49.48
3 10 holes	5.8	2.432	1.187	42	42.41
4 7 holes	3.8	1.968	0.962	36	36.35
5 5 holes	2.3	1.531	0.750	28	28.27

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 33.527 Intercept(b): 3.286 Correlation Coefficient(r): 0.9982

Checked by: Magnum Fan

Date: 11/02/2021

High-Volume TSP Sampler
5-Point Calibration Record

Location : ASR 6
 Calibrated by : K.T.Ho
 Date : 07/02/2021

Sampler

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

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454
 Service Date : 28 January 2021
 Slope (m) : 2.06072
 Intercept (b) : -0.01465
 Correlation Coefficient(r) : 0.99993

Standard Condition

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

Calibration Condition

Pa (hpa) : 1019
 Ta(K) : 294

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1 18 holes	11.7	3.454	1.683	59	59.58
2 13 holes	9.0	3.029	1.477	52	52.51
3 10 holes	6.7	2.614	1.275	45	45.44
4 7 holes	4.8	2.212	1.081	38	38.37
5 5 holes	2.7	1.659	0.812	29	29.28

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

Sampler Calibration Relationship (Linear Regression)

Slope(m): 34.929 Intercept(b): 0.824 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan

Date: 11/02/2021

Certificate of Calibration

Calibration Certification Information			
Cal. Date: February 18, 2020	Rootsmeter S/N: 438320	Ta: 294	°K
Operator: Jim Tisch		Pa: 753.1	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: 2454		

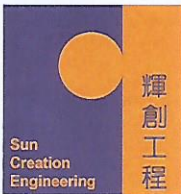
Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4190	3.2	2.00
2	3	4	1	1.0100	6.4	4.00
3	5	6	1	0.9020	7.9	5.00
4	7	8	1	0.8600	8.8	5.50
5	9	10	1	0.7110	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
1.0001	0.7048	1.4173	0.9958	0.7017	0.8836
0.9959	0.9860	2.0044	0.9915	0.9817	1.2496
0.9939	1.1019	2.2410	0.9895	1.0970	1.3971
0.9927	1.1543	2.3504	0.9883	1.1492	1.4653
0.9875	1.3889	2.8347	0.9831	1.3828	1.7672
QSTD	m=	2.07134	QA	m=	1.29704
	b=	-0.04091		b=	-0.02551
	r=	0.99999		r=	0.99999

Calculations			
Vstd=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

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



Certificate of Calibration 校正證書

Certificate No. : C203177
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-1161)

Date of Receipt / 收件日期 : 1 June 2020

Description / 儀器名稱 : Anemometer
Manufacturer / 製造商 : Lutron
Model No. / 型號 : AM-4201
Serial No. / 編號 : AF.27513
Supplied By / 委託者 : 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 : $(23 \pm 2)^{\circ}\text{C}$

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 : 9 June 2020

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 F Lee
Assistant Engineer

Certified By :
核證

H C Chan
Engineer

Date of Issue : 11 June 2020
簽發日期

The test equipment used for calibration is traceable to the National 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室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C203177

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.
- The results presented are the mean of 10 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL386	Multi-function Measuring Instrument	S16494

- Test procedure : MA130N.

- Results :

Air Velocity

Applied Value (m/s)	UUT Reading (m/s)	Measured Correction		
		Value (m/s)	Measurement Uncertainty	
			Expanded Uncertainty (m/s)	Coverage Factor
2.0	1.8	+0.2	0.2	2.0
4.0	3.8	+0.2	0.3	2.0
6.1	5.9	+0.2	0.3	2.0
8.1	8.0	+0.1	0.3	2.0
10.0	10.1	-0.1	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 is traceable to the National 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室書面批准。

ENVIROTECH SERVICES CO.

Calibration Report of Wind Meter

Date of Calibration : 8 December 2020

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 until it keep still
- 2. Wind Speed Test: The wind meter was on-site calibrated against the Anemometer
- 3. Wind Direction Test : The wind meter was on-site calibrated against 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)
4.7	4.2
2.1	2.3
1.7	1.5

Wind Direction Test

Davis (o)	Marine Compass (o)
270	270
1	0
91	90
180	180

Calibrated by: Ho
Yeung Ping Fai
(Technical Officer)

Checked by : Fat
Ho Kam Fat
(Senior Technical Officer)



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. : BA010041
Date of Issue : 18 January 2021
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 : 16H104234
Date of Received : Jan 18, 2021
Date of Calibration : Jan 18, 2021
Date of Next Calibration^(a) : Apr 17, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
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	4.11	0.11	Satisfactory
7.42	7.42	0.00	Satisfactory
10.01	10.09	0.08	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
15	15.0	0.0	Satisfactory
30	29.9	-0.1	Satisfactory
40	41.0	1.0	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s) :-

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from 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.
^(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 the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards..


LEE Chun-ning, Desmond
Senior Chemist



REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA010041
Date of Issue : 18 January 2021
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
1.37	1.43	0.06	Satisfactory
4.90	4.93	0.03	Satisfactory
6.88	6.91	0.03	Satisfactory
8.58	8.77	0.19	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 ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
0.001	146.9	148.7	1.23	Satisfactory
0.01	1412	1325	-6.16	Satisfactory
0.1	12890	12810	-0.62	Satisfactory
0.5	58670	59884	2.07	Satisfactory
1.0	111900	112830	0.83	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.05	0.50	Satisfactory
20	20.03	0.15	Satisfactory
30	31.13	3.77	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.04	--	Satisfactory
10	10.12	1.2	Satisfactory
20	20.89	4.5	Satisfactory
100	103.42	3.4	Satisfactory
800	798.71	-0.2	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AJ120010
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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
Date of Received : Dec 02, 2020
Date of Calibration : Dec 02, 2020
Date of Next Calibration^(a) : Mar 01, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
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	4.03	0.03	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	9.91	-0.10	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
10	10.0	0.0	Satisfactory
20	20.1	0.1	Satisfactory
40	40.1	0.1	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from 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.
^(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.


LEE Chun-ning, Desmond
Senior Chemist



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PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.06	0.46	0.40	Satisfactory
1.80	1.42	-0.38	Satisfactory
5.14	4.80	-0.34	Satisfactory
8.44	8.70	0.26	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 ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
0.001	146.9	159.0	8.24	Satisfactory
0.01	1412	1384	-1.98	Satisfactory
0.1	12890	12846	-0.34	Satisfactory
0.5	58670	57821	-1.45	Satisfactory
1.0	111900	111884	-0.01	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.89	-1.10	Satisfactory
20	19.88	-0.60	Satisfactory
30	29.74	-0.87	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ⁽¹⁾ (NTU)	Tolerance ⁽²⁾ (%)	Results
0	0.11	--	Satisfactory
10	10.13	1.3	Satisfactory
20	20.20	1.0	Satisfactory
100	108.72	8.7	Satisfactory
800	796.13	-0.5	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

⁽¹⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

⁽²⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.