

Appendix B. Calibration Certificates



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

Test Report No. : AG010023
Date of Issue : 06 January 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas Wong

PART B – SAMPLE INFORMATION

Description of Samples : Titrette bottle top burette, 50ml
Brand Name : BRAND
Model Number : 1224B90
Serial Number : 10N65665
Equipment Number : --
Date of Received : 04 Jan, 2017
Date of Calibration : 05 Jan, 2017
Date of Next Calibration^(a) : 05 Apr, 2017

PART C – CALIBRATION REQUESTED

<u>Parameter</u>	<u>Reference Method</u>
Accuracy Test	In-house Method (Gravimetric Method)

~ 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.

APPROVED SIGNATORY :

FUNG Yuen-ching Aries
Laboratory Manager



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PART D – RESULT^{(b),(c)}

Volumetric

Trial	Nominal volume (mL) at interval				
	3 (1-4)	3 (16-19)	3 (23-26)	3 (34-37)	3 (42-45)
1	2.9823	2.9777	2.9744	2.9804	2.9881
2	2.9863	2.9831	2.9739	2.9900	2.9829
3	2.9837	2.9848	2.9896	2.9845	2.9820
4	2.9767	2.9828	2.9836	2.9833	2.9768
5	2.9852	2.9855	2.9828	2.9850	2.9814
6	2.9835	2.9881	2.9852	2.9860	2.9887
7	2.9817	2.9835	2.9842	2.9850	2.9715
8	2.9819	2.9712	2.9894	2.9710	2.9741
9	2.9848	2.9912	2.9688	2.9747	2.9815
10	2.9796	2.9838	2.9872	2.9817	2.9800
Average	2.9826	2.9832	2.9819	2.9822	2.9807
Standard deviation	0.0028	0.0055	0.0071	0.0056	0.0055
Calculate volume (mL)	2.9933	2.9939	2.9926	2.9929	2.9914
Error (%)	-0.2231	-0.2030	-0.2452	-0.2368	-0.2856
RSD (%)	0.0948	0.1832	0.2377	0.1872	0.1832

Acceptance Criteria^(d)

Accuracy (%Error)	< ±1%	< ±1%	< ±1%	< ±1%	< ±1%
Precision (%RSD)	< 1%	< 1%	< 1%	< 1%	< 1%

~ END OF REPORT ~

Remark(s): -

^(b) The results relate only to the tested sample 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) The "acceptance criteria" is applicable for similar equipment used by QPT or quoted from relevant international standards.



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Report of Equipment Performance Check/Calibration

Report No. : AG010004
Date of Issue : 04 January 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 V2 Sonde (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 0001C6A7
Date of Received : 04 Jan, 2017
Date of Calibration : 04 Jan, 2017
Date of Next Calibration^(a) : 04 Apr, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
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	4.02	+0.02	Satisfactory
7.42	7.39	-0.03	Satisfactory
10.01	10.06	+0.05	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.8	15.72	-0.08	Satisfactory
20.8	20.77	-0.03	Satisfactory
36.1	36.14	+0.04	Satisfactory


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

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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 QPT or quoted from relevant international standards.

APPROVED SIGNATORY :


FUNG Yuen-ching Aries
Laboratory Manager



Report of Equipment Performance Check/Calibration

Report No. : AG010004
Date of Issue : 04 January 2017
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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
0.55	0.49	-0.06	Satisfactory
5.10	5.05	-0.05	Satisfactory
8.54	8.62	+0.08	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
146.9	149.8	+2.0	Satisfactory
1412	1442	+2.1	Satisfactory
12890	12662	-1.8	Satisfactory
58670	57984	-1.2	Satisfactory
111900	109480	-2.2	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.95	-0.5	Satisfactory
20	20.09	+0.4	Satisfactory
30	29.84	-0.5	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	--	Satisfactory
4.14	4.2	+1.4	Satisfactory
20.3	20.4	+0.5	Satisfactory
81.8	80.7	-1.3	Satisfactory
778	801	+3.0	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.



Report of Equipment Performance Check/Calibration

Report No. : AG010005
 Date of Issue : 04 January 2017
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PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
 Rm 811, Hin Pui House,
 Hin Keng Estate, Tai Wai
 New Territories, Hong Kong
 Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 V2 Sonde (Multi-Parameters)
 Manufacturer : YSI (a xylem brand)
 Serial Number : 11F100014
 Date of Received : 04 Jan, 2017
 Date of Calibration : 04 Jan, 2017
 Date of Next Calibration^(a) : 04 Apr, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
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	7.44	+0.02	Satisfactory
10.01	10.06	+0.05	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.8	15.89	+0.09	Satisfactory
20.8	20.84	+0.04	Satisfactory
36.1	36.01	-0.09	Satisfactory


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

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Remark(s): -

- ^(a) 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.
- ^(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 QPT or quoted form relevant international standards.

APPROVED SIGNATORY :


 FUNG Yuen-ching Aries
 Laboratory Manager



Report of Equipment Performance Check/Calibration

Report No. : AG010005
Date of Issue : 04 January 2017
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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
0.55	0.51	-0.04	Satisfactory
5.10	5.02	-0.08	Satisfactory
8.54	8.47	-0.07	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
146.9	143.0	-2.7	Satisfactory
1412	1472	+4.2	Satisfactory
12890	12588	-2.3	Satisfactory
58670	58176	-0.8	Satisfactory
111900	110231	-1.5	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.93	-0.7	Satisfactory
20	20.09	+0.4	Satisfactory
30	30.16	+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	--	Satisfactory
4.14	4.2	+1.4	Satisfactory
20.3	20.4	+0.5	Satisfactory
81.8	82.5	+0.9	Satisfactory
778	794	+2.1	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.



Report of Equipment Performance Check/Calibration

Report No. : AG010006
 Date of Issue : 04 January 2017
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PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
 Rm 811, Hin Pui House,
 Hin Keng Estate, Tai Wai
 New Territories, Hong Kong
 Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 V2 Sonde (Multi-Parameters)
 Manufacturer : YSI (a xylem brand)
 Serial Number : 16G104518
 Date of Received : 04 Jan, 2017
 Date of Calibration : 04 Jan, 2017
 Date of Next Calibration^(a) : 04 Apr, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
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	4.05	+0.05	Satisfactory
7.42	7.39	-0.03	Satisfactory
10.01	10.04	+0.03	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.8	15.75	-0.05	Satisfactory
20.8	20.73	-0.07	Satisfactory
36.1	36.06	-0.04	Satisfactory

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

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Remark(s): -

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- ^(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 QPT or quoted from relevant international standards.

APPROVED SIGNATORY :


 FUNG Yuen-ching Aries
 Laboratory Manager



Report of Equipment Performance Check/Calibration

Report No. : AG010006
Date of Issue : 04 January 2017
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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
0.55	0.51	-0.04	Satisfactory
5.10	5.17	+0.07	Satisfactory
8.54	8.59	+0.05	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
146.9	140.4	-4.4	Satisfactory
1412	1436	+1.7	Satisfactory
12890	12560	-2.6	Satisfactory
58670	57974	-1.2	Satisfactory
111900	109872	-1.8	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	20.14	+0.7	Satisfactory
30	29.8	-0.7	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	--	Satisfactory
4.14	4.1	-1.0	Satisfactory
20.3	20.2	-0.5	Satisfactory
81.8	80.4	-1.7	Satisfactory
778	792	+1.8	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.



Report of Equipment Performance Check/Calibration

Report No. : AG010003
Date of Issue : 04 January 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 Sonde (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 000109DF
Date of Received : 04 Jan, 2017
Date of Calibration : 04 Jan, 2017
Date of Next Calibration^(a) : 04 Apr, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
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	4.06	+0.04	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.07	+0.06	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.8	15.84	+0.04	Satisfactory
20.8	20.90	+0.10	Satisfactory
36.1	35.94	-0.16	Satisfactory


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

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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 QPT or quoted from relevant international standards.

APPROVED SIGNATORY :


FUNG Yuen-ching Aries
Laboratory Manager



Report of Equipment Performance Check/Calibration

Report No. : AG010003
Date of Issue : 04 January 2017
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
0.55	0.49	-0.06	Satisfactory
5.10	5.04	-0.06	Satisfactory
8.54	8.60	+0.06	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

(4) Conductivity at 25°C

Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
146.9	141.2	-3.9	Satisfactory
1412	1346	-4.7	Satisfactory
12890	12702	-1.5	Satisfactory
58670	59067	+0.7	Satisfactory
111900	110460	-1.3	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.92	-0.8	Satisfactory
20	19.88	-0.6	Satisfactory
30	29.81	-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	--	Satisfactory
4.14	4.2	+1.4	Satisfactory
20.3	20.4	+0.5	Satisfactory
81.8	80.9	-1.1	Satisfactory
778	803	+3.2	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.