

Appendix E. Calibration Certificates



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

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Email: info@qualityprotest.com; Website: www.qualityprotest.com
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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BB090081
Date of Issue : 19 September 2022
Page No. : 1 of 2

PART A - CUSTOMER INFORMATION

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

PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 16H104234
Date of Received : 16 September 2022
Date of Calibration : 16 September 2022
Date of Next Calibration : 15 December 2022
Request No. : D-BB090081

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H+
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520B
Dissolved oxygen	APHA 21e 4500 O
Turbidity	APHA 21e 2130B
Conductivity	APHA 21e 2510B

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	3.97	-0.03	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	9.92	-0.09	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
40	40.1	0.1	Satisfactory
30	30.1	0.1	Satisfactory
10	10.0	0.0	Satisfactory

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

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.17	1.70	Satisfactory
20	20.50	2.50	Satisfactory
30	30.31	1.03	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

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AUTHORIZED
SIGNATORY:

LEE Chun-ning
Assistant Manager (Chemical Testing)



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(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.38	7.60	0.22	Satisfactory
4.70	4.85	0.15	Satisfactory
1.48	1.80	0.32	Satisfactory
0.45	0.40	-0.05	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.10	--	Satisfactory
10	9.84	-1.60	Satisfactory
20	19.82	-0.90	Satisfactory
100	97.79	-2.20	Satisfactory
800	819.11	2.40	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(6) Conductivity

Expected Reading ($\mu\text{S/cm at } 25^\circ\text{C}$)	Display Reading	Tolerance (%)	Result
146.9	137.9	-6.13	Satisfactory
1412	1380.2	-2.25	Satisfactory
12890	12637.4	-1.96	Satisfactory
58670	57116	-2.65	Satisfactory
111900	112537	0.57	Satisfactory

Tolerance of Conductivity should be less than ± 10.0 (%)

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 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

Test Report No. : R-BB090082
Date of Issue : 19 September 2022
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PART A - CUSTOMER INFORMATION

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

PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)
Manufacturer : YSI (a xylem brand)
Serial Number : 17E100747
Date of Received : 16 September 2022
Date of Calibration : 16 September 2022
Date of Next Calibration : 15 December 2022
Request No. : D-BB090082

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500 H+
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520B
Dissolved oxygen	APHA 21e 4500 O
Turbidity	APHA 21e 2130B
Conductivity	APHA 21e 2510B

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	3.95	-0.05	Satisfactory
7.42	7.37	-0.05	Satisfactory
10.01	9.94	-0.07	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer ($^{\circ}\text{C}$)	Display Reading ($^{\circ}\text{C}$)	Tolerance	Result
40	40.1	0.1	Satisfactory
30	30.1	0.1	Satisfactory
10	10.0	0.0	Satisfactory

Tolerance of Temperature should be less than ± 2.0 ($^{\circ}\text{C}$)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.19	1.90	Satisfactory
20	20.43	2.15	Satisfactory
30	30.33	1.10	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

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(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.38	7.58	0.20	Satisfactory
4.70	4.86	0.16	Satisfactory
1.48	1.81	0.33	Satisfactory
0.45	0.39	-0.06	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.10	--	Satisfactory
10	9.86	-1.40	Satisfactory
20	19.85	-0.70	Satisfactory
100	98.96	-1.00	Satisfactory
800	817.32	2.20	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

(6) Conductivity

Expected Reading ($\mu\text{S/cm at } 25^\circ\text{C}$)	Display Reading	Tolerance (%)	Result
146.9	136.8	-6.88	Satisfactory
1412	1372.4	-2.8	Satisfactory
12890	12522.6	-2.85	Satisfactory
58670	56891	-3.03	Satisfactory
111900	112764	0.77	Satisfactory

Tolerance of Conductivity should be less than ± 10.0 (%)

Remark(s)

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