Contract No. CM 04/2024 - Outlying Islands Sewerage Stage 2 – South Lantau Sewerage Works – Environmental Team Services (2025 - 2027)

23/F, On Hong Commercial Building, 145 Hennessy Road, Wan Chai, Hong Kong

# Appendix 5.1 Calibration certificates of the water quality monitoring equipment



Unit 10, 5/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.

: R-BE010374

Date of Issue

: 22 January 2025

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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

Serial Number :

16H104233

Date of Received:

17 January 2025

Date of Calibration:

17 January 2025 16 April 2025

Date of Next Calibration: Request No.:

D-BE010374

## PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

**Test Parameter** 

Reference Method

pH value

APHA 21e 4500-H+ B

Temperature

Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March

2008: Working Thermometer Calibration Procedure

Salinity

APHA 21e 2520 B

Dissolved oxygen

APHA 23e 4500-O G (Membrane Electrode Method)

Turbidity

APHA 21e 2130 B (Nephelometric Method)

Conductivity

APHA 21e 2510 B

# PART D - CALIBRATION RESULT

#### (1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.05	0.05	Satisfactory
7.42	7.37	-0.05	Satisfactory
10.01	10.04	0.03	Satisfactory

Tolerance of pH value should be less than  $\pm$  0.2 (pH unit)

## (2) Temperature

Reading of Ref. thermometer ( °C )	Display Reading (°C)	Tolerance	Result
10.0	10.1	0.1	Satisfactory
20,0	18.6	-1.4	Satisfactory
40.0	41.2	1.2	Satisfactory

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

## (3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.82	-1.80	Satisfactory
20	21.60	8.00	Satisfactory
30	30.10	0.33	Satisfactory

Tolerance of Salinity should be less than  $\pm$  10.0 (%)

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AUTHORIZED SIGNATORY:



# REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

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# (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
8.80	8.84	0.04	Satisfactory
3.87	3.52	-0.35	Satisfactory
1.36	1.12	-0.24	Satisfactory
0.56	0.25	-0.31	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

# (5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (a)	Result
0	0.04		Satisfactory
10	10.60	6.0	Satisfactory
20	19.20	-4.0	Satisfactory
100	106.80	6.8	Satisfactory
800	764.00	-4.5	Satisfactory

Tolerance of Turbidity should be less than  $\pm$  10.0 (%)

# (6) Conductivity

Expected Reading ( μS/cm at 25°C )	Display Reading	Tolerance ( % )	Result
146.9	142.4	-3.1	Satisfactory
1412	1472	4.2	Satisfactory
12890	12780	-0.9	Satisfactory
58670	59276	1.0	Satisfactory
111900	114260	2.1	Satisfactory

Tolerance of Conductivity should be less than  $\pm$  10.0 ( % )

# Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principles followed by QPT or relevant international standards.
- The results relate only to the calibrated equipment as received.
- The performance of the equipment stated in this report is checked using independent reference material, with results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on the item under calibration/checking, regardless of equipment precision or significant figures.
- The "Tolerance Limit" mentioned is the acceptance criteria applicable to similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---

<sup>(</sup>a) For 0 NTU, Display Reading should be less than 1 NTU

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No.

: R-BE010372

Date of Issue

: 21 January 2025

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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:

IZV

Serial Number:

17H105557

Date of Received:

17 January 2025

Date of Calibration:

17 January 2025

Date of Next Calibration:

16 April 2025

Request No.:

D-BE010372

## PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter

Reference Method

pH value

APHA 21e 4500-H+ B

Temperature

Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March

2008: Working Thermometer Calibration Procedure

Salinity

APHA 21e 2520 B

Dissolved oxygen

APHA 23e 4500-O G (Membrane Electrode Method)

Turbidity

APHA 21e 2130 B (Nephelometric Method)

Conductivity

APHA 21e 2510 B

# **PART D - CALIBRATION RESULT**

## (1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.02	0.02	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	10.02	0.01	Satisfactory

Tolerance of pH value should be less than  $\pm$  0.2 ( pH unit )

## (2) Temperature

Reading of Ref. thermometer ( °C)	Display Reading ( °C )	Tolerance	Result
10.0	9.9	-0.1	Satisfactory
20.0	19.2	-0.8	Satisfactory
40.0	41.6	1.6	Satisfactory

Tolerance of Temperature should be less than  $\pm\,2.0$  ( °C )

# (3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.02	0.20	Satisfactory
20	19.80	-1.00	Satisfactory
30	29.40	-2.00	Satisfactory

Tolerance of Salinity should be less than  $\pm 10.0$  (%)

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AUTHORIZED SIGNATORY:

FUNG Yuen-ching Laboratory Manager



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

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## **PART D - CALIBRATION RESULT**

# (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
8.80	8.82	0.02	Satisfactory
3.87	3.55	-0.32	Satisfactory
1.36	1.18	-0.18	Satisfactory
0.56	0.26	-0.30	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L.)

# (5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (a)	Result
0	0.05		Satisfactory
10	9.80	-2.0	Satisfactory
20	20.40	2.0	Satisfactory
100	97.20	-2.8	Satisfactory
800	836.00	4.5	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  (%)

## (6) Conductivity

Expected Reading ( μS/cm at 25°C )	Display Reading	Tolerance (%)	Result
146.9	140.6	-4.3	Satisfactory
1412	1492	5.7	Satisfactory
12890	12672	-1.7	Satisfactory
58670	57260	-2.4	Satisfactory
111900	108240	-3.3	Satisfactory

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

#### Remark(s)

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<sup>(</sup>a) For 0 NTU, Display Reading should be less than 1 NTU



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# REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No.

: R-BE020058

**Date of Issue** 

: 20 February 2025

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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

Serial Number:

S/N: 21K101469

Date of Received:

14 February 2025

Date of Calibration : Date of Next Calibration : 14 February 2025 13 May 2025

Request No.:

D-BE020058

## PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

**Test Parameter** 

Reference Method

pH value

APHA 21e 4500-H+ B

Temperature

Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March

2008: Working Thermometer Calibration Procedure

Salinity

APHA 21e 2520 B

Dissolved oxygen

APHA 23e 4500-O G (Membrane Electrode Method)

Turbidity

APHA 21e 2130 B (Nephelometric Method)

Conductivity

APHA 21e 2510 B

# PART D - CALIBRATION RESULT

# (1) pH value

Target ( pH unit )	Display Reading (pH unit)	Tolerance	Result
4.00	4.09	0.09	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

## (2) Temperature

Reading of Ref. thermometer ( °C)	Display Reading (°C)	Tolerance	Result
10.0	10.0	0.0	Satisfactory
20.0	20.0	0.0	Satisfactory
40.0	40.0	0.0	Satisfactory

Tolerance of Temperature should be less than  $\pm 2.0$  ( °C )

# (3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.04	0.40	Satisfactory
20	20.10	0.50	Satisfactory
30	29.82	-0.60	Satisfactory

Tolerance of Salinity should be less than  $\pm$  10.0 ( % )

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## (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
7.59	7.92	0.33	Satisfactory
4.05	4.18	0.13	Satisfactory
1.14	1.25	0.11	Satisfactory
0.01	0.19	0.18	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm$  0.5 ( mg/L )

## (5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (a)	Result
0	0.09		Satisfactory
10	9.94	-0.6	Satisfactory
20	21.16	5.8	Satisfactory
100	103.33	3.3	Satisfactory
800	812.82	1.6	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  (%)

## (6) Conductivity

Expected Reading ( μS/cm at 25°C )	Display Reading	Tolerance (%)	Result
146.9	151.1	2.9	Satisfactory
1412	1541	9.1	Satisfactory
12890	13060	1.3	Satisfactory
58670	58772	0.2	Satisfactory
111900	114643	2.5	Satisfactory

Tolerance of Conductivity should be less than  $\pm~10.0$  ( % )

# Remark(s)

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--- END OF REPORT ---

<sup>(</sup>a) For 0 NTU, Display Reading should be less than 1 NTU