



**CMA Testing
and Certification
Laboratories**

廠商會檢定中心

**Term Contract for Provision of Sampling and Analyzing of
Wastewater and Sludge for Various Sewage Treatment Facilities in
Urban Area, Lantau and Outlying Islands to the
Drainage Services Department**

Contract No. : DE/2016/12

Applicant : DRAINAGE SERVICES DEPARTMENT
SEWAGE SERVICES BRANCH
HARBOUR AREA TREATMENT SCHEME DIVISION

Address : 5/F., WESTERN MAGISTRACY,
2A, POK FU LAM ROAD, HONG KONG

Application Number : LV023396(1)

Report Number : AV0062152(5)

Report Issued Date : 06 Nov 2017

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Lau Yan Kin
Senior Manager
Environmental Division

CMA Industrial Development Foundation Limited

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CMA Testing and Certification Laboratories

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Report No.: AV0062152(5)

Term Contract for Provision of Sampling and Analyzing of Wastewater and Sludge Samples for Various and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department

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Term Contract for Provision of Sampling and Analyzing of Wastewater
and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to
the Drainage Services Department

EXECUTIVE SUMMARY

1. This is the water quality monitoring report prepared by CMA Testing and Certification Laboratory (CMA Testing) for Contract No. DE/2016/12 "Term Contract for Provision of Sampling and analysing of Wastewater and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department (2017-2019)". This report documented the results and findings of Operation Phase Environmental Monitoring works conducted for Marine Water Quality Monitoring (MWQM) of Project in Sep 2017.
2. In accordance with the Final EM&A Manual, environmental monitoring has been conducted in the reporting month with a Quarterly Basis for various parameters as summarized in **Table I**.

Table I Summary Table for Environmental Monitoring Works Conducted in the Reporting Month

Monitoring Parameters	Monitoring Date	Laboratory Testing Parameters
Marine Water Quality	26 Sep 2017	E.coli, Total Residual Chlorine (TRC), Chlorination by-products (CBPs) and Contaminants of Concern (COCs)



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Term Contract for Provision of Sampling and Analyzing of Wastewater
and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to
the Drainage Services Department

1. INTRODUCTION

- 1.1. CMA Testing was commissioned by Drainage Services Department (DSD) to undertake the operation phase environmental monitoring for Advance Disinfection Facilities (ADF) at Stonecutters Island Sewage Treatment Works (SCISTW) (thereafter called the “the Services”).
- 1.2. The operation phase monitoring, which include effluent quality monitoring, marine water quality monitoring and emergency discharge monitoring, is to monitor the effluent and marine water quality impact of ADF during its operation phase.
- 1.3. This is the water quality monitoring report prepared by CMA Testing that documented the results and findings of Operation Phase Water Quality Monitoring works conducted for Marine Water Quality Monitoring (MWQM) of Project on 26 Sep 2017.



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2. MARINE WATER QUALITY MONITORING

Monitoring Requirements

- 2.1. Monitoring was taken at three water depths, namely, 1m below water surface, mid-depth and 1m above sea bed, expect where the water depth is less than 6m, in which case the mid-depth station may be omitted. If the water depth be less than 3m, only the mid-depth station will be monitored.
- 2.2. Six samples (replicates) at each monitoring stations were collected by collecting the same amount of water sample at each depth.
- 2.3. One grab sample was collected at each water depth for E.coli analysis.

Monitoring Locations

- 2.4. Six monitoring stations were designated for the marine water quality monitoring programme. The locations are summarized in Table 3.1 and shown on **Figure 2**.

Table 3.1 Proposed Marine Water Quality Monitoring Stations

Station	Description	Coordinates	
		Easting	Northing
1	Edge of Mixing Zone (northwest of effluent diffuser)	829762.00	819604.47
2	Edge of ZID (northwest of effluent diffuser)	830117.99	819251.93
3	Edge of ZID (southeast of effluent diffuser)	830186.21	819184.37
4	Edge of Mixing Zone (southeast of effluent diffuser)	830525.00	818848.87
SM6	Control Station	826179.81	805902.89
SM12	Control Station	819524.19	808420.40

Monitoring Schedule

- 2.5. The marine water quality monitoring was conducted coincide with effluent quality monitoring on 26 Sep 2017.

Monitoring Equipment

- 2.6. The equipment used in the marine water quality monitoring in the reporting month is summarized in Table 3.2. Copies of calibration certificates are shown in **Appendix II-Report no. AV0062153(6)**.

Table 3.2 Marine Water Quality Monitoring Equipment

Equipment	Model and Make	Qty
Water Sampler	Kahlsico Water Sampler	1
Water Depth Detector	Seafarer 700	1
Positioning System	Global Positioning System (GPS)	1
Multi-parameter Water Quality System	Model YSI 6920 V2	1



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Term Contract for Provision of Sampling and Analyzing of Wastewater and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department

Monitoring Parameters and Frequency

- 2.7. Marine Water sampling on E.coli, Total Residual Chlorine (TRC), Chlorination By-Products (CBPs) shall and the Contaminants of Concern (COCs) shall be performed quarterly throughout the contract period.
- 2.8. The list of parameters to be analysed as well as the corresponding analytical methods and detection limit are listed in Table 3.3

Table 3.3 Analytical Methods for Laboratory Analysis for Marine Water Samples

Parameters		Analytical Method	Limit of Reporting (µg/L)
TRC and Potential CBPs			
Total residual Chlorine		APHA 21ed 4500 Cl G	10
Bromoform	Tri-halomethanes (THMs)	TG-ENV-WW-78 (Headspace GC-MS)	0.1
Bromodichloromethane			0.1
Chloroform			0.1
Dibromochloromethane			5
Bromoacetic acid	Haloacetic Acids (HAAs)	TG-ENV-WW-79 (GC-ECD)	2
Chloroacetic acid			2
Dibromoacetic acid			2
Dichloroacetic acid			2
Trichloroacetic acid			2
Bacteria			
E.coli		Environmental Monitoring Laboratory Test Method Manual TM09/EC/10/097 Issue 3, Environmental Protection Department, HK.	1 cfu/100ml
Contaminants of Concern (COCs)			
Methylene chloride	Halogenated Aliphatics	TG-ENV-WW-78 (Headspace GC-MS)	20
Carbon tetrachloride			0.5
1,1-dichloroethane			0.5
1,2-dichloroethane			0.5
1,1-dichloroethylene			0.5
1,2-dichloropropane			0.5
Tetrachloroethylene			0.5
1,1,1-trichloroethane	Halogenated Aliphatics		0.5
1,1,2-trichloroethane			0.5
Trichloroethylene			0.5
2-chlorophenol	Phenols & Haloethers	TG-ENV-WW-80 (GC-MS)	0.5
2,4-dichlorophenol			0.5



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p-chloro-m-cresol			0.5
Pentachlorophenol			0.5
2,4,6-trichlorophenol			0.5
Bis(2-chloroethoxy) methane			0.5
Chlorobenzene		TG-ENV-WW-78	0.5
1,4-dichlorobenzene		(Headspace GC-MS)	0.5
Hexachlorobenzene	Chlorinated Hydrocarbons & Organochlorine Pesticides	USEPA 625	0.01
Hexachlorocyclopentadiene			2.5
Hexachloroethane			0.5
1,2,4-trichlorobenzene			0.5
Alpha-BHC			0.01
Beta-BHC			0.01
Gamma-BHC			0.01

3. RESULTS AND OBSERVATIONS

Weather and Sea Condition

- 3.1. The weather condition was Fine while the sea condition was moderate during the sampling period 26 Sep 2017 in the reporting month.

Marine Water Quality

- 3.2. The in-situ measurement results including dissolved oxygen, turbidity, salinity, pH and temperature of the marine water monitoring. Also, the results of marine water quality monitoring conducted on 26 Sep 2017 and QC report are shown in **Appendix II – Report no. AV0062153(6)**.



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Report No.: AV0062152(5)

Term Contract for Provision of Sampling and Analyzing of Wastewater
and Sludge Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to
the Drainage Services Department

Appendix I - Location of Monitoring Stations

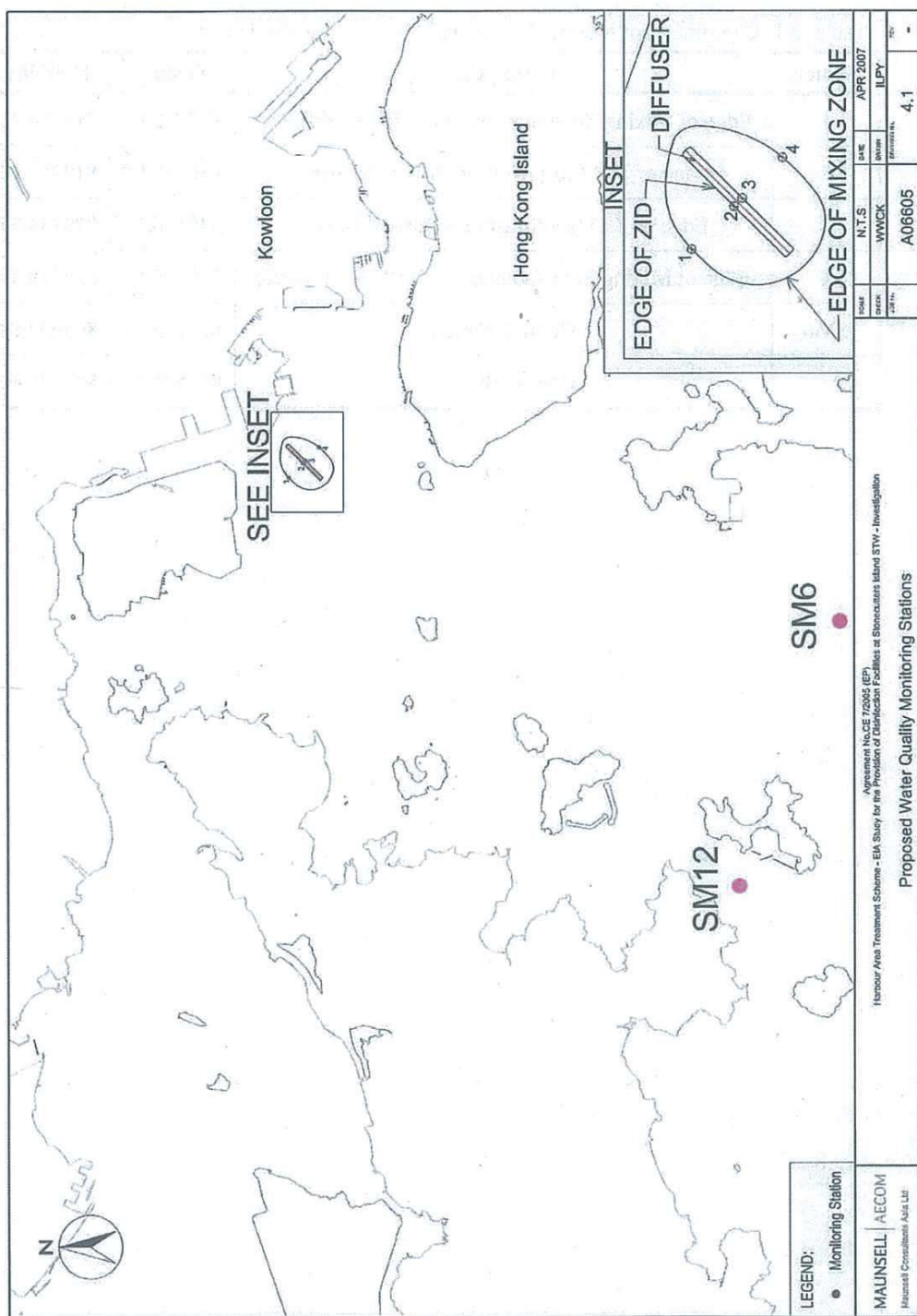


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Appendix II - Report for Laboratory Test(s)



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6) Date: 06 Nov 2017

Application No. : LV023396(1)

Applicant : DRAINAGE SERVICES DEPARTMENT
SEWAGE SERVICES BRANCH
HARBOUR AREA TREATMENT SCHEME DIVISION
5/F., WESTERN MAGISTRACY,
2A, POK FU LAM ROAD, HONG KONG

Contract No. : DE/2016/12

Project Name : Term Contract for Provision of Sampling and Analyzing of Wastewater and Sludge for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department

Sample Description : Eighteen (18) marine water samples sampled by the staff of CMA Industrial Development Foundation Limited. Samples were refrigerated during delivery.

Sample ID : Refer to Sample ID on page 4 to 11.

Station	Description	Coordinates	
		Easting	Northing
1	Edge of Mixing Zone (northwest of effluent diffuser)	829762.00	819604.47
2	Edge of ZID (northwest of effluent diffuser)	830117.99	819251.93
3	Edge of ZID (southeast of effluent diffuser)	830186.21	819184.37
4	Edge of Mixing Zone (southeast of effluent diffuser)	830525.00	818848.87
SM6	Control Station	826179.81	805902.89
SM12	Control Station	819524.19	808420.40

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Lau Yan Kin
Senior Manager
Environmental Division

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廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6) Date: 06 Nov 2017

Application No. : LV023396(1)

Sampling Date : 26 Sep 2017.

Date Received : 26 Sep 2017.

Test Period : 26 Sep 2017 to 24 Oct 2017.

Test Requested :

1. Temperature (on-site measurement)
2. pH (on-site measurement)
3. Salinity (on-site measurement)
4. Dissolved Oxygen (DO) (mg/L) (on-site measurement)
5. Dissolved Oxygen (DOS) (% saturation) (on-site measurement)
6. Turbidity (on-site measurement)
7. Total Residual Chlorine (on-site measurement)
8. E. coli count
9. Bromoform
10. Bromodichloromethane
11. Chloroform
12. Dibromochloromethane
13. Bromoacetic acid
14. Chloroacetic acid
15. Dibromoacetic acid
16. Dichloroacetic acid
17. Trichloroacetic acid
18. Methylene chloride
19. Carbon tetrachloride
20. 1,1-dichloroethane
21. 1,2-dichloroethane
22. 1,1-dichloroethylene
23. 1,2-dichloropropane
24. Tetrachloroethylene
25. 1,1,1-trichloroethane
26. 1,1,2-trichloroethane
27. Trichloroethylene
28. 2-chlorophenol
29. 2,4-dichlorophenol
30. p-chloro-m-cresol
31. Pentachlorophenol
32. 2,4,6-trichlorophenol
33. Bis(2-chloroethoxy) methane
34. Chlorobenzene
35. 1,4-dichlorobenzene
36. Hexachlorobenzene
37. Hexachlorocyclopentadiene
38. Hexachloroethane
39. 1,2,4-trichlorobenzene
40. Alpha-BHC
41. Beta-BHC
42. Gamma-BHC



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TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Test Method : 1-5. In house method (By multimeter)
6. APHA 2130B
7. APHA 21ed 4500 Cl G
8. Environmental Monitoring Laboratory Test Method Manual
TM09/EC/10/097 Issue 3, Environmental Protection Department,
HK.
9. TG-ENV-WW-78 (Headspace GC-MS)
10. TG-ENV-WW-78 (Headspace GC-MS)
11. TG-ENV-WW-78 (Headspace GC-MS)
12. TG-ENV-WW-78 (Headspace GC-MS)
13. TG-ENV-WW-79 (GC-ECD)
14. TG-ENV-WW-79 (GC-ECD)
15. TG-ENV-WW-79 (GC-ECD)
16. TG-ENV-WW-79 (GC-ECD)
17. TG-ENV-WW-79 (GC-ECD)
18. TG-ENV-WW-78 (Headspace GC-MS)
19. TG-ENV-WW-78 (Headspace GC-MS)
20. TG-ENV-WW-78 (Headspace GC-MS)
21. TG-ENV-WW-78 (Headspace GC-MS)
22. TG-ENV-WW-78 (Headspace GC-MS)
23. TG-ENV-WW-78 (Headspace GC-MS)
24. TG-ENV-WW-78 (Headspace GC-MS)
25. TG-ENV-WW-78 (Headspace GC-MS)
26. TG-ENV-WW-78 (Headspace GC-MS)
27. TG-ENV-WW-78 (Headspace GC-MS)
28. TG-ENV-WW-80 (GC-MS)
29. TG-ENV-WW-80 (GC-MS)
30. TG-ENV-WW-80 (GC-MS)
31. TG-ENV-WW-80 (GC-MS)
32. TG-ENV-WW-80 (GC-MS)
33. TG-ENV-WW-80 (GC-MS)
34. TG-ENV-WW-78 (Headspace GC-MS)
35. TG-ENV-WW-78 (Headspace GC-MS)
36. USEPA 625
37. USEPA 625
38. USEPA 625
39. USEPA 625
40. USEPA 625
41. USEPA 625
42. USEPA 625

Test Result : Refer to results on page 4 to 11.



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TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	E.coli (CFU/100mL)	Temperature (°C)		Salinity (ppt)		pH		DO (mg/L)		DOS (%)		Turbidity (NTU)		TRC (mg/L)	
1	11:34	10.6	1.0	97	29.9	29.9	25.5	25.5	8.0	8.0	5.7	5.7	82.3	82.3	1.8	1.8	0.01	0.01
			5.3	170	29.5	29.5	26.2	26.2	8.0	8.0	5.3	5.3	76.4	76.4	2.7	2.7	0.04	0.04
			9.6	190	29.4	29.4	26.4	26.4	8.0	8.0	5.2	5.2	75.6	75.6	3.8	3.8	0.05	0.05
2	12:00	17.8	1.0	45	29.4	29.4	25.0	25.0	7.7	7.7	6.0	6.0	87.4	87.4	2.5	2.5	0.04	0.04
			8.9	70	29.4	29.4	26.4	26.4	8.0	8.0	5.6	5.6	80.2	80.2	4.2	4.2	0.04	0.04
			16.8	10	29.2	29.2	26.6	26.6	8.0	8.0	5.3	5.3	76.8	76.8	5.6	5.6	0.02	0.02
3	12:39	9.7	1.0	140	29.3	29.3	25.9	25.9	7.8	7.8	6.2	6.2	87.8	87.8	1.7	1.7	0.03	0.03
			4.9	76	29.3	29.3	26.2	26.2	7.9	7.9	5.8	5.8	83.1	83.1	2.4	2.4	0.03	0.03
			8.7	76	29.2	29.2	26.4	26.4	8.0	8.0	5.3	5.3	76.5	76.5	4.2	4.2	0.02	0.02
4	13:12	11	1.0	130	29.4	29.4	25.8	25.8	7.9	7.9	5.8	5.8	82.9	82.9	1.9	1.9	<0.01	<0.01
			5.5	160	29.4	29.4	26.3	26.3	8.0	8.0	5.5	5.5	75.4	75.4	3.0	3.0	0.05	0.05
			10.0	42	29.2	29.2	26.8	26.8	8.0	8.0	5.2	5.2	75.3	75.3	3.9	3.9	0.02	0.02
SM6	14:04	13.9	1.0	92	32.2	32.2	22.5	22.5	8.1	8.1	6.2	6.2	88.6	88.6	1.4	1.4	<0.01	<0.01
			7.0	61	30.3	30.3	26.1	26.1	8.2	8.2	5.7	5.7	81.5	81.5	2.9	2.9	0.02	0.02
			12.9	170	30.2	30.2	27.5	27.5	8.3	8.3	5.4	5.4	77.2	77.2	4.1	4.1	0.04	0.04
SM12	14:55	7.9	1.0	100	31.0	31.0	22.6	22.6	8.3	8.3	6.5	6.5	90.2	90.2	1.8	1.8	<0.01	<0.01
			4.0	92	30.2	30.2	28.2	28.2	8.3	8.3	5.8	5.8	80.5	80.5	2.7	2.7	<0.01	<0.01
			6.9	11	30.0	30.0	28.4	28.4	8.3	8.3	5.4	5.4	74.9	74.9	4.3	4.3	0.01	0.01



TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	Bromoform (µg/L)		Bromodichloromethane (µg/L)		Chloroform (µg/L)		Dibromochloromethane (µg/L)		Bromacetic acid (µg/L)		Chloroacetic acid (µg/L)		Dibromoacetic acid (µg/L)		
1	11:34	10.6	1.0	0.5	0.5	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	
			5.3	0.5	0.5	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			9.6	0.5	0.5	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
2	12:00	17.8	1.0	0.8	0.8	<0.1	<0.1	0.2	0.2	<5	<5	<2	<2	<2	<2	<2	<2	
			8.9	0.4	0.4	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			16.8	0.5	0.5	<0.1	<0.1	0.2	0.2	<5	<5	<2	<2	<2	<2	<2	<2	<2
3	12:39	9.7	1.0	0.6	0.6	<0.1	<0.1	0.1	0.1	<5	<5	<2	<2	<2	<2	<2	<2	
			4.9	0.5	0.5	<0.1	<0.1	0.1	0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			8.7	0.5	0.5	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
4	13:12	11	1.0	0.6	0.6	<0.1	<0.1	0.1	0.1	<5	<5	<2	<2	<2	<2	<2	<2	
			5.5	0.4	0.4	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			10.0	0.4	0.4	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
SM6	14:04	13.9	1.0	0.3	0.3	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	
			7.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			12.9	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
SM12	14:55	7.9	1.0	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	
			4.0	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
			6.9	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<5	<5	<2	<2	<2	<2	<2	<2	<2
LRV				<0.1		<0.1		<0.1		<5		<2		<2		<2		

TEST REPORT

Report No. : AV0062153(6)

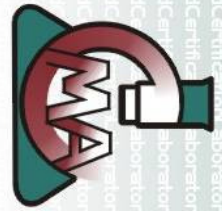
Application No. : LV023396(1)

Marine Water Quality

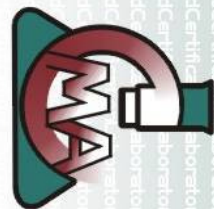
Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	Dichloroacetic acid (µg/L)		Trichloroacetic acid (µg/L)	
1	11:34	10.6	1.0	<2	<2	<2	<2
			5.3	<2	<2	<2	<2
			9.6	<2	<2	<2	<2
2	12:00	17.8	1.0	<2	<2	<2	<2
			8.9	<2	<2	<2	<2
			16.8	<2	<2	<2	<2
3	12:39	9.7	1.0	<2	<2	<2	<2
			4.9	<2	<2	<2	<2
			8.7	<2	<2	<2	<2
4	13:12	11	1.0	<2	<2	<2	<2
			5.5	<2	<2	<2	<2
			10.0	<2	<2	<2	<2
SM6	14:04	13.9	1.0	<2	<2	<2	<2
			7.0	<2	<2	<2	<2
			12.9	<2	<2	<2	<2
SM12	14:55	7.9	1.0	<2	<2	<2	<2
			4.0	<2	<2	<2	<2
			6.9	<2	<2	<2	<2
			LRV	<2		<2	

Date: 06 Nov 2017



CMA Testing and Certification Laboratories
 廠商會檢定中心



CMA Testing and Certification Laboratories
 廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

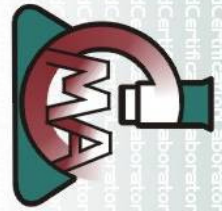
Date: 06 Nov 2017

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	Methylene chloride (µg/L)		Carbon tetrachloride (µg/L)		1,1-dichloroethane (µg/L)		1,2-dichloroethane (µg/L)		1,1-dichloroethylene (µg/L)		1,2-dichloropropane (µg/L)		Tetrachloroethylene (µg/L)		
1	11:34	10.6	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			5.3	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			9.6	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2	12:00	17.8	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			8.9	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			16.8	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3	12:39	9.7	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			4.9	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			8.7	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
4	13:12	11	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			5.5	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			10.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SM6	14:04	13.9	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			7.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			12.9	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SM12	14:55	7.9	1.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			4.0	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
			6.9	<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
LRV				<20	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		



**CMA Testing
and Certification
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廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	1,1,1-trichloroethane (µg/L)		1,1,2-trichloroethane (µg/L)		Trichloroethylene (µg/L)		2-chlorophenol (µg/L)		2,4-dichlorophenol (µg/L)		p-chloro-m-cresol (µg/L)		Pentachlorophenol (µg/L)	
1	11:34	10.6	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			5.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			9.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2	12:00	17.8	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			8.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			16.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3	12:39	9.7	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			4.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			8.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4	13:12	11	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			5.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			10.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SM6	14:04	13.9	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			7.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			12.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SM12	14:55	7.9	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			4.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			6.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
LRV				<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5	



**CMA Testing
and Certification
Laboratories**
廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	2,4,6-trichlorophenol (µg/L)		Bis(2-chloroethoxy) methane (µg/L)		Chlorobenzene (µg/L)		1,4-dichlorobenzene (µg/L)		Hexachlorobenzene (µg/L)		Hexachlorocyclopentadiene (µg/L)		Hexachloroethane (µg/L)	
				<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
1	11:34	10.6	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			5.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			9.6	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5		
2	12:00	17.8	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			8.9	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			16.8	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
3	12:39	9.7	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			4.9	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			8.7	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
4	13:12	11	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			5.5	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			10.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
SM6	14:04	13.9	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			7.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			12.9	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
SM12	14:55	7.9	1.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5
			4.0	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
			6.9	<0.5	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<2.5	<2.5	<0.5	<0.5	
LRV				<0.5		<0.5		<0.5		<0.5		<0.01		<2.5		<0.5	

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**CMA Testing
and Certification
Laboratories**
廠商會檢定中心

TEST REPORT

Date: 06 Nov 2017

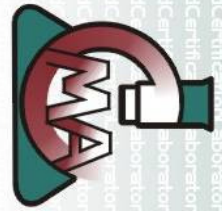
Report No. : AV0062153(6)

Application No. : LV023396(1)

Marine Water Quality

Sampling Date 26-Sep-17

Monitoring Location	Time	Water Depth (m)	Sampling Depth (m)	1,2,4-trichlorobenzene (µg/L)		Alpha-BHC (µg/L)		Beta-BHC (µg/L)		Gamma-BHC (µg/L)	
1	11:34	10.6	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			5.3	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			9.6	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2	12:00	17.8	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			8.9	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			16.8	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3	12:39	9.7	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			4.9	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			8.7	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4	13:12	11	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			5.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			10.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SM6	14:04	13.9	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			7.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			12.9	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SM12	14:55	7.9	1.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			4.0	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			6.9	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
LRV				<0.5		<0.01		<0.01		<0.01	



**CMA Testing
and Certification
Laboratories**
廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

QC Report

Sampling Date 26-Sep-17

Parameter	Method Blank	Acceptance Criteria	QC Recoery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Bromoform	<0.02	<0.02	93	80-120	84	70-130	9	≤20
Bromodichloromethane	<0.02	<0.02	97	80-120	96	70-130	6	≤20
Chloroform	<0.02	<0.02	96	80-120	88	70-130	8	≤20
Dibromochloromethane	<1	<1	108	80-120	85	70-130	7	≤20
Bromoacetic acid	<0.4	<0.4	104	80-120	107	70-130	6	≤20
Chloroacetic acid	<0.4	<0.4	106	80-120	113	70-130	6	≤20
Dibromoacetic acid	<0.4	<0.4	92	80-120	92	70-130	5	≤20
Dichloroacetic acid	<0.4	<0.4	105	80-120	109	70-130	7	≤20
Trichloroacetic acid	<0.4	<0.4	94	80-120	107	70-130	6	≤20

Parameter	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Methylene chloride	≤4	>4	103	80-120	104	70-130	8	≤20
Carbon tetrachloride	<0.1	<0.1	108	80-120	91	70-130	7	≤20
1,1-dichloroethane	<0.1	<0.1	96	80-120	107	70-130	6	≤20
1,2-dichloroethane	<0.1	<0.1	107	80-120	82	70-130	5	≤20
1,1-dichloroethylene	<0.1	<0.1	94	80-120	87	70-130	6	≤20
1,2-dichloropropane	<0.1	<0.1	102	80-120	86	70-130	8	≤20
Tetrachloroethylene	<0.1	<0.1	96	80-120	95	70-130	2	≤20
1,1,1-trichloroethane	<0.1	<0.1	95	80-120	86	70-130	7	≤20
1,1,1,2-trichloroethane	<0.1	<0.1	98	80-120	89	70-130	8	≤20
Trichloroethylene	<0.1	<0.1	101	80-120	102	70-130	6	≤20
2-chlorophenol	<0.1	<0.1	95	80-120	97	70-130	5	≤20
2,4-dichlorophenol	<0.1	<0.1	106	80-120	86	70-130	6	≤20
p-chloro-m-cresol	<0.1	<0.1	104	80-120	108	70-130	9	≤20
Pentachlorophenol	<0.1	<0.1	107	80-120	93	70-130	8	≤20
2,4,6-trichlorophenol	<0.1	<0.1	97	80-120	95	70-130	4	≤20
Bis(2-chloroethoxy) methane	<0.1	<0.1	97	80-120	87	70-130	8	≤20
Chlorobenzene	<0.1	<0.1	95	80-120	92	70-130	7	≤20
1,4-dichlorobenzene	<0.1	<0.1	98	80-120	98	70-130	9	≤20
Hexachlorobenzene	<0.005	<0.005	104	80-120	103	70-130	3	≤20
Hexachlorocyclopentadiene	<0.5	<0.5	105	80-120	108	70-130	2	≤20
Hexachloroethane	<0.1	<0.1	104	80-120	112	70-130	5	≤20
1,2,4-trichlorobenzene	<0.1	<0.1	104	80-120	107	70-130	5	≤20
Alpha-BHC	<0.005	<0.005	93	80-120	97	70-130	8	≤20
Beta-BHC	<0.005	<0.005	106	80-120	95	70-130	5	≤20
Gamma-BHC	<0.005	>0.005	98	80-120	113	70-130	7	≤20



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)

Calibration Certificate



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

CALIBRATION CERTIFICATION

Report No. : AG080059
Date of Issue : 14 August, 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

CMA Testing and Certification Laboratories
Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung Street,
Fotan, Shatin, N.T., Hong Kong
Attn: Mr. Jason Lau

PART B – DESCRIPTION

Name of Equipment : Professional Plus (Pro Plus) Multiparameters Instrument
Manufacturer : YSI (a xylem brand)
Serial Number : Meter: 17F104341
ISE-ISE-DO-COND 17F100380
ORP YSI 1002 17F
pH YSI 1001 17D
Date of Received : Aug 09, 2017
Date of Calibration : Aug 11, 2017
Date of Next Calibration^(a) : Nov 11, 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
Oxidation-Reduction Potential (ORP)	APHA 21e 2580 B (Zobell's solution)
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
6.86	6.87	+0.01	Satisfactory
7.42	7.41	+0.01	Satisfactory
10.01	10.01	+0.00	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
12.6	12.6	+0.0	Satisfactory
25.8	25.8	+0.0	Satisfactory
35.8	35.7	-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 the acceptance criteria applicable for similar equipment used by QPT or quoted from relevant international standards.

APPROVED SIGNATORY :

FUNG Yuen-ching Aries
Laboratory Manager



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)



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., Foton, Hong Kong
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CALIBRATION CERTIFICATION

Report No. : AG080059
Date of Issue : 14 August, 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
0.09	0.03	-0.06	Satisfactory
3.86	3.89	-0.03	Satisfactory
7.98	8.05	+0.07	Satisfactory

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

(4) Conductivity at 25°C

Expected Reading (μ S/cm)	Displayed Reading (μ S/cm)	Tolerance (%)	Results
146.9	155.4	+5.79	Satisfactory
1412	1400	-0.95	Satisfactory
12890	12890	+0.00	Satisfactory
58670	56700	-3.36	Satisfactory
111900	107336	-4.08	Satisfactory

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

~ END OF REPORT ~



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)



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CALIBRATION CERTIFICATION

Report No. : AG080059
Date of Issue : 14 August, 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

CMA Testing and Certification Laboratories
Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung Street,
Fotan, Shatin, N.T., Hong Kong
Attn: Mr. Jason Lau

PART B – DESCRIPTION

Name of Equipment : Professional Plus (Pro Plus) Multiparameters Instrument
Manufacturer : YSI (a xylem brand)
Serial Number : Meter: 17F104341
ISE-ISE-DO-COND 17F100380
ORP YSI 1002 17F
pH YSI 1001 17D
Date of Received : Aug 09, 2017
Date of Calibration : Aug 11, 2017
Date of Next Calibration^(a) : Nov 11, 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
Oxidation-Reduction Potential (ORP)	APHA 21e 2580 B (Zobell's solution)
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
6.86	6.87	+0.01	Satisfactory
7.42	7.41	+0.01	Satisfactory
10.01	10.01	-0.00	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
12.6	12.6	+0.0	Satisfactory
25.8	25.8	+0.0	Satisfactory
35.8	35.7	-0.1	Satisfactory

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

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Remark(s): -

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- ^(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



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)



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Report of Equipment Performance Check/Calibration

Report No. : AG080099
Date of Issue : 18 August 2017
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Lin Pui House,
Hin Keng Estate, Tai Wai
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 : 17E102520
Date of Received : 17 Aug. 2017
Date of Calibration : 17 Aug. 2017
Date of Next Calibration^(a) : 17 Nov. 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21c 4500-H ⁺ B
Dissolved Oxygen	APHA 21c 4500-O G
Conductivity at 25°C	APHA 21c 2510 B
Salinity	APHA 21c 2520 B
Turbidity	APHA 21c 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	7.39	-0.03	Satisfactory
10.01	9.96	-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
15.0	15.0	+0.0	Satisfactory
26.0	25.8	-0.2	Satisfactory
34.0	33.8	-0.8	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s):-

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- ^(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



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AV0062153(6)

Date: 06 Nov 2017

Application No. : LV023396(1)



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Report of Equipment Performance Check/Calibration

Report No. : AG080099
Date of Issue : 18 August 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
0.03	0.09	+0.05	Satisfactory
4.01	3.95	-0.06	Satisfactory
7.95	7.93	-0.02	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	150.2	+2.2	Satisfactory
1412	1423	+0.8	Satisfactory
12890	12621	-2.1	Satisfactory
58670	57379	-2.2	Satisfactory
111900	112124	+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	10.08	+0.8	Satisfactory
20	20.24	+1.2	Satisfactory
30	30.42	+1.4	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ⁽⁶⁾ (NTU)	Tolerance ⁽⁶⁾ (%)	Results
0	0	--	Satisfactory
10	10.2	+2.0	Satisfactory
20	21.1	+5.5	Satisfactory
100	106.4	+6.4	Satisfactory
800	820.1	+2.5	Satisfactory

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

~ END OF REPORT ~

Remarks(s) :-

- ⁽⁶⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.
⁽⁶⁾ 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.

***** End of Report *****