



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

**Provision of Routine Marine Water Quality Monitoring Services**

**Report for the Month of Jul 2021**

Contract No. : DE/2020/02

Applicant : SEWAGE TREATMENT DIVISION 2  
ELECTRICAL AND MECHANICAL BRANCH  
DRAINAGE SERVICES DEPARTMENT

Address : STONECUTTERS ISLAND SEWAGE TREATMENT WORKS.,  
NGONG SHUNG ROAD, NGONG SHUEN CHAU,  
KOWLOON, HONG KONG

Application Number : LA019477(6)


Report Number : AA0044707(0)

Report Issued Date : 01 Sep 2021

Remark : This report supersedes the report no. AA0035111(0) issued on 10 Aug 2021.

*For and on behalf of*  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_

  
Lau Yan Kin  
Senior Manager  
Environmental Division

The conformity statement stated in Conclusion above is based on the decision rule agreed with applicant and listed in [www.cmateesting.org/qac/statement-of-conformity.pdf](http://www.cmateesting.org/qac/statement-of-conformity.pdf)  
This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmateesting.org](http://www.cmateesting.org).  
This document shall not be reproduced except in full or with written approval by CMA Testing. The observations and test results in this report are relevant only to the sample tested.



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

---

## TABLE OF CONTENT

---

|  |       |
|--|-------|
| 1. Introduction                              | 2     |
| 2. Marine Water Quality Monitoring           | 3 – 5 |
| 3. Results and Observations                  | 5     |
| Appendix                                     |       |
| Appendix I – Location of Monitoring Stations |       |
| Appendix II – Report for Laboratory Test(s)  |       |



Term Contract for Provision of Sampling and Analyzing of 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 for Contract No. DE/2020/02 “Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department”. This report documented the results and findings of Operation Phase Environmental Monitoring works conducted for Routine Marine Water Quality Monitoring (rMWQM) of Project.
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  | 15 Jul 2021     | E.coli,<br>Total Residual Chlorine (TRC),<br>Chlorination by-products (CBPs)<br>and Contaminants of Concern<br>(COCs) |

Term Contract for Provision of Sampling and Analyzing of 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 includes 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 Routine Marine Water Quality Monitoring (rMWQM) of Project.

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

**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, except 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 2.1 and shown on **Appendix I**.

**Table 2.1 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 monitoring date.

**Monitoring Equipment**

- 2.6. The equipment used in the marine water quality monitoring in the reporting month is summarized in Table 2.2. Copies of calibration certificates are shown in **Appendix II**.

**Table 2.2 Marine Water Quality Monitoring Equipment**

| Equipment                            | Model and Make                                 | Qty |
|--------------------------------------|--|-----|
| Water Sampler                        | Kahlsico Water Sampler                         | 1   |
| Water Depth Detector                 | Garmin Striker 4 or equivalent                 | 1   |
| Positioning System                   | Global Positioning System (GPS)                | 1   |
| Chlorine Meter                       | HACH Pocket Colorimeter II or equivalent       | 1   |
| Turbidimeter                         | HACH 2100Q or equivalent                       | 1   |
| Multi-parameter Water Quality System | YSI Professional Plus (Pro Plus) or equivalent | 1   |

Term Contract for Provision of Sampling and Analyzing of 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) 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 2.3

**Table 2.3 Analytical Methods for Laboratory Analysis for Marine Water Samples**

| Parameters                            |                         | Analytical Method   | Limit of Reporting (µg/L) |
|---------------------------------------|-------------------------|---|---------------------------|
| <b>TRC and Potential CBPs</b>         |                         |   |                           |
| Total Residual Chlorine               |                         | APHA 23ed 4500 Cl G   | 10                        |
| Bromoform                             | Tri-halomethanes (THMs) | USEPA 8260B   | 0.1                       |
| Bromodichloromethane                  |                         |   | 0.1                       |
| Chloroform                            |                         |   | 0.1                       |
| Dibromochloromethane                  |                         |   | 5                         |
| Bromoacetic acid                      | Haloacetic Acids (HAAs) | In house method<br>TG-ENV-WW-79<br>(by GC-ECD)  | 2                         |
| Chloroacetic acid                     |                         |   | 2                         |
| Dibromoacetic acid                    |                         |   | 2                         |
| Dichloroacetic acid                   |                         |   | 2                         |
| Trichloroacetic acid                  |                         |   | 2                         |
| <b>Bacteria</b>                       |                         |   |                           |
| E.coli                                |                         | Environmental Monitoring Laboratory Test Method Manual TM09/EC/10/098 Issue 3, Environmental Protection Department, HK. | 1 cfu/100ml               |
| <b>Contaminants of Concern (COCs)</b> |                         |   |                           |
| Methylene chloride                    | Halogenated Aliphatics  | ISO 17943:2016 & USEPA 8206B  | 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    | In house method<br>TG-ENV-WW-80, 84 & 86<br>(by GC-MSD)   | 0.5                       |
| 2,4-dichlorophenol                    |                         |   | 0.5                       |
| p-chloro-m-cresol                     |                         |   | 0.5                       |

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

---

|                             |  |  |      |
|-----------------------------|--|--|------|
| Pentachlorophenol           |  |  | 0.5  |
| 2,4,6-trichlorophenol       |  |  | 0.5  |
| Bis(2-chloroethoxy) methane |  |  | 0.5  |
| Chlorobenzene               | Chlorinated Hydrocarbons & Organochlorine Pesticides | In house method TG-ENV-WW-78 (by Headspace GC/MSD) & | 0.5  |
| 1,4-dichlorobenzene         |  |  | 0.5  |
| Hexachlorobenzene           |  |  | 0.01 |
| Hexachlorocyclopentadiene   |  |  | 2.5  |
| Hexachloroethane            |  |  | 0.5  |
| 1,2,4-trichlorobenzene      |  | In house method TG-ENV-WW-86 (by GC-MSD)             | 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 on the monitoring date

#### Marine Water Quality

- 3.2. The in-situ measurement results include dissolved oxygen, turbidity, salinity, pH and temperature of the marine water monitoring. Also, the results of marine water quality monitoring conducted on the monitoring date and QC report are shown in **Appendix II**.



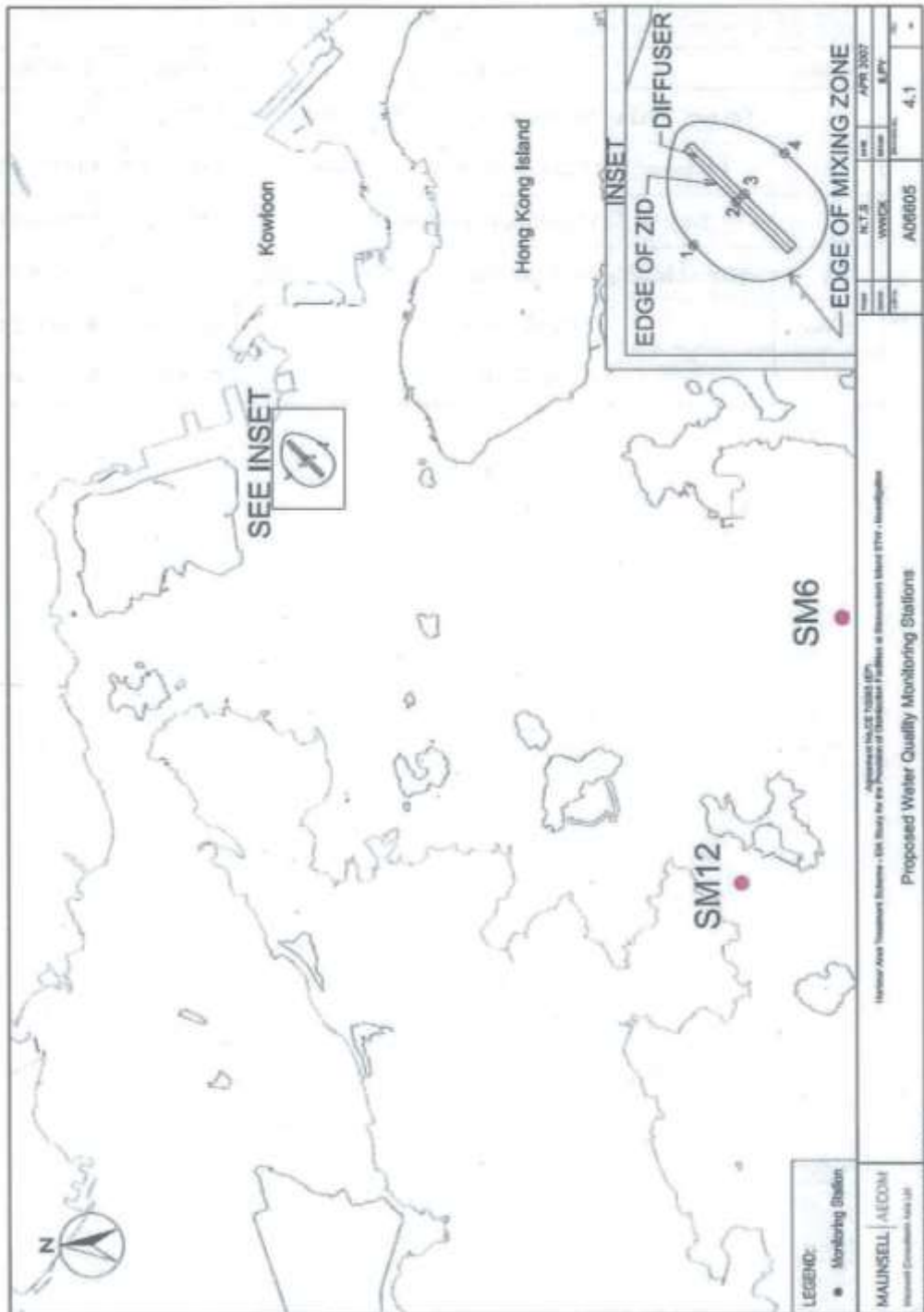
Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department

---

**Appendix I - Location of Monitoring Stations**



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





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

---

**Appendix II - Report for Laboratory Test(s)**

## TEST REPORT

Report No. : AA0044844(2) Date: 01 Sep 2021  
 Application No. : LA019477(6)  
 Applicant : SEWAGE TREATMENT DIVISION 2  
 ELECTRICAL AND MECHANICAL BRANCH  
 DRAINAGE SERVICES DEPARTMENT  
 STONECUTTERS ISLAND SEWAGE TREATMENT WORKS.,  
 NGONG SHUNG ROAD, NGONG SHUEN CHAU,  
 KOWLOON, HONG KONG

Contract No. : DE/2020/02  
 Project Name : Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department  
 Sample Description : Six (6) marine sampling point, 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 10.

| 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  
 Senior Manager

Page 1 of 19

## TEST REPORT

Report No. : AA0044844(2) Date: 01 Sep 2021

Application No. : LA019477(6)

Sampling Date : 15 Jul 2021.

Date Received : 15 Jul 2021.

Test Period : 15 Jul 2021 to 09 Aug 2021.

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

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Test Method : 1-5. In house method (by multimeter)  
6. APHA 23ed 2130 B  
7. APHA 23ed 4500 Cl G  
8. Environmental Monitoring Laboratory Test Method Manual  
TM09/EC/10/098 Issue 3, Environmental Protection  
Department, HK.  
9-12. USEPA 8260B  
13-17. In house method TG-ENV-WW-79 (by GC-MSD)  
18-27. ISO 17943:2016 & USEPA 8260B  
28-33. In house method TG-ENV-WW-80, 84 & 86 (by GC-MSD)  
34-42. In house method TG-ENV-WW-78 (by Headspace GC-MSD) &  
In house method TG-ENV-WW-86 (by GC-MSD)

Test Result : Refer to results on page 4 to 12.

Remark : This report supersedes the report AA0035112(1) issued on 10 Aug 2021.

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

### Marine Water Quality

Sampling Date 15-Jul-2021

| 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                   | 16:51-16:55 | 9.8             | 1.0                | 20                 | 29.4             | 29.4 | 25.5           | 25.5 | 8.6 | 8.6 | 8.3       | 8.3 | 125.3   | 125.3 | 3.1             | 3.1 | 0.04       | 0.04 |
|                     |             |                 | 5.0                | 16                 | 28.6             | 28.6 | 26.2           | 26.2 | 8.6 | 8.6 | 8.3       | 8.3 | 123.5   | 123.5 | 3.0             | 3.0 | 0.02       | 0.02 |
|                     |             |                 | 8.8                | 22                 | 28.0             | 28.0 | 26.8           | 26.8 | 8.5 | 8.5 | 7.4       | 7.4 | 109.0   | 109.0 | 3.7             | 3.7 | 0.03       | 0.03 |
| 2                   | 16:58-17:02 | 10.8            | 1.0                | 20                 | 28.8             | 28.8 | 26.1           | 26.1 | 8.6 | 8.6 | 7.0       | 7.0 | 104.8   | 104.8 | 2.8             | 2.8 | 0.02       | 0.02 |
|                     |             |                 | 5.4                | 14                 | 27.9             | 27.9 | 27.0           | 27.0 | 8.5 | 8.5 | 6.5       | 6.5 | 96.0    | 96.0  | 2.9             | 2.9 | 0.03       | 0.03 |
|                     |             |                 | 9.8                | 8                  | 27.5             | 27.5 | 27.6           | 27.6 | 8.4 | 8.4 | 5.0       | 5.0 | 73.6    | 73.6  | 3.3             | 3.3 | 0.02       | 0.02 |
| 3                   | 17:04-17:08 | 10.5            | 1.0                | 26                 | 28.6             | 28.6 | 26.3           | 26.3 | 8.6 | 8.6 | 6.3       | 6.3 | 93.8    | 93.8  | 2.5             | 2.5 | 0.04       | 0.04 |
|                     |             |                 | 5.3                | 10                 | 27.7             | 27.7 | 27.5           | 27.5 | 8.5 | 8.5 | 5.8       | 5.8 | 85.4    | 85.4  | 2.0             | 2.0 | 0.04       | 0.04 |
|                     |             |                 | 9.5                | 10                 | 27.3             | 27.3 | 28.0           | 28.0 | 8.9 | 8.9 | 4.7       | 4.7 | 69.7    | 69.7  | 5.2             | 5.2 | 0.03       | 0.03 |
| 4                   | 17:12-17:16 | 10.1            | 1.0                | 16                 | 28.5             | 28.5 | 26.4           | 26.4 | 9.0 | 9.0 | 5.3       | 5.3 | 79.6    | 79.6  | 2.2             | 2.2 | 0.03       | 0.03 |
|                     |             |                 | 5.1                | 8                  | 27.9             | 27.9 | 26.9           | 26.9 | 9.0 | 9.0 | 5.9       | 5.9 | 87.4    | 87.4  | 2.8             | 2.8 | 0.03       | 0.03 |
|                     |             |                 | 9.1                | 16                 | 27.8             | 27.8 | 27.1           | 27.1 | 8.9 | 8.9 | 5.2       | 5.2 | 77.1    | 77.1  | 2.8             | 2.8 | 0.02       | 0.02 |
| SM6                 | 15:41-15:45 | 15.4            | 1.0                | 4                  | 28.2             | 28.2 | 28.6           | 28.6 | 8.7 | 8.7 | 5.9       | 5.9 | 88.6    | 88.6  | 1.7             | 1.7 | 0.01       | 0.01 |
|                     |             |                 | 7.7                | 6                  | 28.1             | 28.1 | 29.0           | 29.0 | 8.7 | 8.7 | 5.8       | 5.8 | 87.3    | 87.3  | 3.3             | 3.3 | 0.03       | 0.03 |
|                     |             |                 | 14.4               | 12                 | 28.0             | 28.0 | 29.3           | 29.3 | 8.6 | 8.6 | 5.7       | 5.7 | 85.6    | 85.6  | 3.3             | 3.3 | 0.03       | 0.03 |
| SM12                | 15:03-15:08 | 8.9             | 1.0                | 4                  | 28.2             | 28.2 | 28.4           | 28.4 | 8.7 | 8.7 | 5.9       | 5.9 | 87.2    | 87.2  | 1.6             | 1.6 | 0.04       | 0.04 |
|                     |             |                 | 4.5                | 5                  | 28.2             | 28.2 | 28.9           | 28.9 | 8.6 | 8.6 | 5.7       | 5.7 | 85.9    | 85.9  | 3.2             | 3.2 | 0.02       | 0.02 |
|                     |             |                 | 7.9                | 7                  | 28.0             | 28.0 | 29.2           | 29.2 | 8.6 | 8.6 | 5.6       | 5.6 | 84.7    | 84.7  | 3.2             | 3.2 | 0.02       | 0.02 |
|                     |             |                 | LRV                | 1                  | 0.1              |      | 1              |      | 0.1 |     | 0.5 mg/L  |     | -       |       | 1               |     | 0.01 mg/L  |      |

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Marine Water Quality

Sampling Date 15-Jul-2021

| 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) |    |
|---------------------|-------------|-----------------|--------------------|------------------|------|-----------------------------|------|-------------------|------|-----------------------------|----|------------------------|----|
| 1                   | 16:51-16:55 | 9.8             | 1.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 5.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 8.8                | 0.1              | 0.1  | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
| 2                   | 16:58-17:02 | 10.8            | 1.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 5.4                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 9.8                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
| 3                   | 17:04-17:08 | 10.5            | 1.0                | 0.1              | 0.1  | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 5.3                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 9.5                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
| 4                   | 17:12-17:16 | 10.1            | 1.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 5.1                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 9.1                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
| SM6                 | 15:41-15:45 | 15.4            | 1.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 7.7                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 14.4               | 0.1              | 0.1  | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
| SM12                | 15:03-15:08 | 8.9             | 1.0                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 4.5                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | 7.9                | <0.1             | <0.1 | <0.1                        | <0.1 | <0.1              | <0.1 | <5                          | <5 | <2                     | <2 |
|                     |             |                 | LRV                | 0.1              |      | 0.1                         |      | 0.1               |      | 5                           |    | 2                      |    |



## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Marine Water Quality

Sampling Date 15-Jul-2021

| Monitoring Location | Time        | Water Depth (m) | Sampling Depth (m) | Chloroacetic acid (µg/L) |    | Dibromoacetic acid (µg/L) |    | Dichloroacetic acid (µg/L) |    | Trichloroacetic acid (µg/L) |    |
|---------------------|-------------|-----------------|--------------------|--------------------------|----|---------------------------|----|----------------------------|----|-----------------------------|----|
| 1                   | 16:51-16:55 | 9.8             | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 5.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 8.8                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
| 2                   | 16:58-17:02 | 10.8            | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 5.4                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 9.8                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
| 3                   | 17:04-17:08 | 10.5            | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 5.3                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 9.5                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
| 4                   | 17:12-17:16 | 10.1            | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 5.1                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 9.1                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
| SM6                 | 15:41-15:45 | 15.4            | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 7.7                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 14.4               | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
| SM12                | 15:03-15:08 | 8.9             | 1.0                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 4.5                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | 7.9                | <2                       | <2 | <2                        | <2 | <2                         | <2 | <2                          | <2 |
|                     |             |                 | LRV                | 2                        | 2  | 2                         | 2  | 2                          | 2  | 2                           |    |





## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

### Marine Water Quality

Sampling Date 15-Jul-2021

| 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) |      |      |
|---------------------|-------------|-----------------|--------------------|---------------------------|-----|-----------------------------|------|---------------------------|------|---------------------------|------|-----------------------------|------|----------------------------|------|------|
| 1                   | 16:51-16:55 | 9.8             | 1.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 5.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 | <0.5 |
|                     |             |                 | 8.8                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 | <0.5 |
| 2                   | 16:58-17:02 | 10.8            | 1.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 5.4                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 9.8                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
| 3                   | 17:04-17:08 | 10.5            | 1.0                | <20                       | <20 | <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 |      |
|                     |             |                 | 9.5                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
| 4                   | 17:12-17:16 | 10.1            | 1.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 5.1                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 9.1                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
| SM6                 | 15:41-15:45 | 15.4            | 1.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 7.7                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 14.4               | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
| SM12                | 15:03-15:08 | 8.9             | 1.0                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 4.5                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 7.9                | <20                       | <20 | <0.5                        | <0.5 | <0.5                      | <0.5 | <0.5                      | <0.5 | <0.5                        | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | LRV                | 20                        |     | 0.5                         |      | 0.5                       |      | 0.5                       |      | 0.5                         |      | 0.5                        |      |      |

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Marine Water Quality

Sampling Date 15-Jul-2021

| Monitoring Location | Time        | Water Depth (m) | Sampling Depth (m) | Tetrachloroethylene (µg/L) |      | 1,1,1-trichloroethane (µg/L) |      | 1,1,2-trichloroethane (µg/L) |      | Trichloroethylene (µg/L) |      | 2-chlorophenol (µg/L) |      | 2,4-dichlorophenol (µg/L) |      |      |
|---------------------|-------------|-----------------|--------------------|----------------------------|------|------------------------------|------|------------------------------|------|--------------------------|------|-----------------------|------|---------------------------|------|------|
| 1                   | 16:51-16:55 | 9.8             | 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 |      |
|                     |             |                 | 5.0                | <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 |
|                     |             |                 | 8.8                | <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 |
| 2                   | 16:58-17:02 | 10.8            | 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 |      |
|                     |             |                 | 5.4                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
|                     |             |                 | 9.8                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
| 3                   | 17:04-17:08 | 10.5            | 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 |      |
|                     |             |                 | 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 |      |
|                     |             |                 | 9.5                | <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                   | 17:12-17:16 | 10.1            | 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 |      |
|                     |             |                 | 5.1                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
|                     |             |                 | 9.1                | <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                 | 15:41-15:45 | 15.4            | 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 |      |
|                     |             |                 | 7.7                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
|                     |             |                 | 14.4               | <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                | 15:03-15:08 | 8.9             | 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 |      |
|                     |             |                 | 4.5                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
|                     |             |                 | 7.9                | <0.5                       | <0.5 | <0.5                         | <0.5 | <0.5                         | <0.5 | <0.5                     | <0.5 | <0.5                  | <0.5 | <0.5                      | <0.5 |      |
|                     |             |                 | LRV                | 0.5                        |      | 0.5                          |      | 0.5                          |      | 0.5                      |      | 0.5                   |      | 0.5                       |      |      |



## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Marine Water Quality

Sampling Date 15-Jul-2021

| Monitoring Location | Time        | Water Depth (m) | Sampling Depth (m) | p-chloro-m-cresol (µg/L) |      | Pentachlorophenol (µg/L) |      | 2,4,6-trichlorophenol (µg/L) |      | Bis(2-chloroethoxy) methane (µg/L) |      | Chlorobenzene (µg/L) |      | 1,4-dichlorobenzene (µg/L) |      |      |
|---------------------|-------------|-----------------|--------------------|--------------------------|------|--------------------------|------|------------------------------|------|------------------------------------|------|----------------------|------|----------------------------|------|------|
| 1                   | 16:51-16:55 | 9.8             | 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 |      |
|                     |             |                 | 5.0                | <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 |
|                     |             |                 | 8.8                | <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 |
| 2                   | 16:58-17:02 | 10.8            | 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 |      |
|                     |             |                 | 5.4                | <0.5                     | <0.5 | <0.5                     | <0.5 | <0.5                         | <0.5 | <0.5                               | <0.5 | <0.5                 | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 9.8                | <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 |
| 3                   | 17:04-17:08 | 10.5            | 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 |      |
|                     |             |                 | 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 |      |
|                     |             |                 | 9.5                | <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                   | 17:12-17:16 | 10.1            | 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 |      |
|                     |             |                 | 5.1                | <0.5                     | <0.5 | <0.5                     | <0.5 | <0.5                         | <0.5 | <0.5                               | <0.5 | <0.5                 | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 9.1                | <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                 | 15:41-15:45 | 15.4            | 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 |      |
|                     |             |                 | 7.7                | <0.5                     | <0.5 | <0.5                     | <0.5 | <0.5                         | <0.5 | <0.5                               | <0.5 | <0.5                 | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 14.4               | <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                | 15:03-15:08 | 8.9             | 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 |      |
|                     |             |                 | 4.5                | <0.5                     | <0.5 | <0.5                     | <0.5 | <0.5                         | <0.5 | <0.5                               | <0.5 | <0.5                 | <0.5 | <0.5                       | <0.5 |      |
|                     |             |                 | 7.9                | <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 |
|                     |             |                 | LRV                | 0.5                      | 0.5  | 0.5                      | 0.5  | 0.5                          | 0.5  | 0.5                                | 0.5  | 0.5                  | 0.5  | 0.5                        |      |      |



## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Marine Water Quality

Sampling Date 15-Jul-2021

| Monitoring Location | Time        | Water Depth (m) | Sampling Depth (m) | Hexachlorobenzene (µg/L) |       | Hexachlorocyclopentadiene (µg/L) |      | Hexachloroethane (µg/L) |      | 1,2,4-trichlorobenzene (µg/L) |      | Alpha-BHC (µg/L) |       | Beta-BHC (µg/L) |       | Gamma-BHC (µg/L) |       |       |
|---------------------|-------------|-----------------|--------------------|--------------------------|-------|----------------------------------|------|-------------------------|------|-------------------------------|------|------------------|-------|-----------------|-------|------------------|-------|-------|
|                     |             |                 |                    |                          |       |                                  |      |                         |      |                               |      |                  |       |                 |       |                  |       |       |
| 1                   | 16:51-16:55 | 9.8             | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 5.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 | <0.01 |
|                     |             |                 | 8.8                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 | <0.01 |
| 2                   | 16:58-17:02 | 10.8            | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 5.4                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 9.8                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 | <0.01 |
| 3                   | 17:04-17:08 | 10.5            | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 5.3                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 9.5                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
| 4                   | 17:12-17:16 | 10.1            | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 5.1                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 9.1                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
| SM6                 | 15:41-15:45 | 15.4            | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 7.7                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 14.4               | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
| SM12                | 15:03-15:08 | 8.9             | 1.0                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 4.5                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | 7.9                | <0.01                    | <0.01 | <2.5                             | <2.5 | <0.5                    | <0.5 | <0.5                          | <0.5 | <0.01            | <0.01 | <0.01           | <0.01 | <0.01            | <0.01 |       |
|                     |             |                 | LRV                | 0.01                     |       | 2.5                              |      | 0.5                     |      | 0.5                           |      | 0.01             |       | 0.01            |       | 0.01             |       |       |



## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

### QC Report

| Parameter               | Method Blank | Acceptance Criteria | QC Recovery | Acceptance Criteria | Spike Recovery | Acceptance Criteria | Duplicate (RPD) | Acceptance Criteria |
|-------------------------|--------------|---------------------|-------------|---------------------|----------------|---------------------|-----------------|---------------------|
|                         | (mg/L)       | (mg/L)              | (%)         | (%)                 | (%)            | (%)                 | (%)             | (%)                 |
| Total Residual Chlorine | <0.01        | <0.01               | 112         | 85-115              | 97             | 85-115              | <1              | ≤20                 |
|                         |              |                     |             |                     |                |                     |                 |                     |
| 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               | 105         | 80-120              | 109            | 70-130              | 8               | ≤20                 |
| Bromodichloromethane    | <0.02        | <0.02               | 105         | 80-120              | 87             | 70-130              | 11              | ≤20                 |
| Chloroform              | <0.02        | <0.02               | 92          | 80-120              | 82             | 70-130              | 4               | ≤20                 |
| Dibromochloromethane    | <1           | <1                  | 113         | 80-120              | 113            | 70-130              | 17              | ≤20                 |
| Bromoacetic acid        | <0.4         | <0.4                | 86          | 80-120              | 86             | 70-130              | 9               | ≤20                 |
| Chloroacetic acid       | <0.4         | <0.4                | 92          | 80-120              | 97             | 70-130              | 7               | ≤20                 |
| Dibromoacetic acid      | <0.4         | <0.4                | 103         | 80-120              | 78             | 70-130              | 15              | ≤20                 |
| Dichloroacetic acid     | <0.4         | <0.4                | 87          | 80-120              | 92             | 70-130              | 13              | ≤20                 |
| Trichloroacetic acid    | <0.4         | <0.4                | 91          | 80-120              | 83             | 70-130              | 15              | ≤20                 |

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

### QC Report

| Parameter                   | Method Blank<br>(mg/L) | Acceptance Criteria<br>(mg/L) | QC Recovery<br>(%) | Acceptance Criteria<br>(%) | Spike Recovery<br>(%) | Acceptance Criteria<br>(%) | Duplicate (RPD)<br>(%) | Acceptance Criteria<br>(%) |
|-----------------------------|------------------------|-------------------------------|--------------------|----------------------------|-----------------------|----------------------------|------------------------|----------------------------|
| Methylene chloride          | <4                     | <4                            | 102                | 80-120                     | 104                   | 70-130                     | 7                      | ≤20                        |
| Carbon tetrachloride        | <0.1                   | <0.1                          | 106                | 80-120                     | 98                    | 70-130                     | 9                      | ≤20                        |
| 1,1-dichloroethane          | <0.1                   | <0.1                          | 113                | 80-120                     | 108                   | 70-130                     | 8                      | ≤20                        |
| 1,2-dichloroethane          | <0.1                   | <0.1                          | 87                 | 80-120                     | 106                   | 70-130                     | 5                      | ≤20                        |
| 1,1-dichloroethylene        | <0.1                   | <0.1                          | 95                 | 80-120                     | 84                    | 70-130                     | 12                     | ≤20                        |
| 1,2-dichloropropane         | <0.1                   | <0.1                          | 95                 | 80-120                     | 92                    | 70-130                     | 9                      | ≤20                        |
| Tetrachloroethylene         | <0.1                   | <0.1                          | 103                | 80-120                     | 88                    | 70-130                     | 14                     | ≤20                        |
| 1,1,1-trichloroethane       | <0.1                   | <0.1                          | 89                 | 80-120                     | 81                    | 70-130                     | 14                     | ≤20                        |
| 1,1,2-trichloroethane       | <0.1                   | <0.1                          | 96                 | 80-120                     | 113                   | 70-130                     | 10                     | ≤20                        |
| Trichloroethylene           | <0.1                   | <0.1                          | 103                | 80-120                     | 98                    | 70-130                     | 5                      | ≤20                        |
| 2-chlorophenol              | <0.1                   | <0.1                          | 88                 | 80-120                     | 95                    | 70-130                     | 11                     | ≤20                        |
| 2,4-dichlorophenol          | <0.1                   | <0.1                          | 106                | 80-120                     | 96                    | 70-130                     | 7                      | ≤20                        |
| p-chloro-m-cresol           | <0.1                   | <0.1                          | 115                | 80-120                     | 92                    | 70-130                     | 9                      | ≤20                        |
| Pentachlorophenol           | <0.1                   | <0.1                          | 112                | 80-120                     | 104                   | 70-130                     | 13                     | ≤20                        |
| 2,4,6-trichlorophenol       | <0.1                   | <0.1                          | 104                | 80-120                     | 98                    | 70-130                     | 14                     | ≤20                        |
| Bis(2-chloroethoxy) methane | <0.1                   | <0.1                          | 97                 | 80-120                     | 110                   | 70-130                     | 14                     | ≤20                        |
| Chlorobenzene               | <0.1                   | <0.1                          | 93                 | 80-120                     | 116                   | 70-130                     | 5                      | ≤20                        |
| 1,4-dichlorobenzene         | <0.1                   | <0.1                          | 102                | 80-120                     | 107                   | 70-130                     | 7                      | ≤20                        |
| Hexachlorobenzene           | <0.005                 | <0.005                        | 85                 | 80-120                     | 86                    | 70-130                     | 9                      | ≤20                        |
| Hexachlorocyclopentadiene   | <0.5                   | <0.5                          | 94                 | 80-120                     | 107                   | 70-130                     | 11                     | ≤20                        |
| Hexachloroethane            | <0.1                   | <0.1                          | 116                | 80-120                     | 95                    | 70-130                     | 6                      | ≤20                        |
| 1,2,4-trichlorobenzene      | <0.1                   | <0.1                          | 108                | 80-120                     | 84                    | 70-130                     | 8                      | ≤20                        |
| Alpha-BHC                   | <0.005                 | <0.005                        | 112                | 80-120                     | 117                   | 70-130                     | 7                      | ≤20                        |
| Beta-BHC                    | <0.005                 | <0.005                        | 97                 | 80-120                     | 112                   | 70-130                     | 9                      | ≤20                        |
| Gamma-BHC                   | <0.005                 | <0.005                        | 87                 | 80-120                     | 89                    | 70-130                     | 15                     | ≤20                        |

## TEST REPORT

Report No. : AA0044844(2)

Date: 01 Sep 2021

Application No. : LA019477(6)

Calibration Certificate



### Calibration Certificate

**Certificate No.: CC0312106**

1. Description

|                          |   |
|--------------------------|---|
| Calibration item :       | a) pH at 25°C<br>b) Temperature<br>c) Dissolve Oxygen<br>d) Conductivity at 25°C<br>e) Salinity<br>f) Oxidation-Reduction Potential (ORP) |
| Equipment description :  | Multiparameter Instrument   |
| Manufacturer :           | YSI   |
| Type / Model No. :       | Professional Plus   |
| Serial No. :             | Meter: 111100821  |
| Assigned equipment no. : | N/A   |
| Adjustment :             | N/A   |
| Remark :                 | Received with good condition  |

2. Customer information

|                   |   |
|-------------------|---|
| Customer :        | CMA Testing and Certification Laboratories  |
| Address :         | Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung Street, Fotan, Shatin, NT, Hong Kong |
| Date of receipt : | 11 June 2021  |

3. Date of performance of the calibration

|                         |                   |
|-------------------------|-------------------|
| Date of calibration :   | 21 June 2021      |
| Next Calibration date : | 21 September 2021 |

Authorized Signatory  
Warren Yeung 

Company Chop:   
Certificate issue date: 22 June 2021

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD. Page 1 of 1  
 2. The Certificate is issued subject to the latest term and conditions, available accessible at our web site. 00012106

Cal Lab Limited  
 Address: Room 2103, Technology Plaza, 29-35 She Tsun Road, Tuen Wan, NT, Hong Kong.  
 Tel: (852) 2698 8198 Fax: (852) 2611 2194 Email: info@calab.com.hk Website: calab.com.hk

## TEST REPORT

Report No. : AA0044844(2)  
 Application No. : LA019477(6)

Date: 01 Sep 2021



#### 4. Result of Calibration

##### a) Temperature

| Reference reading (°C) | Display Reading (°C) | Error of indication (°C) |
|------------------------|----------------------|--------------------------|
| 15.15                  | 14.8                 | -0.4                     |
| 25.12                  | 24.9                 | -0.2                     |
| 35.08                  | 35.1                 | 0.0                      |

##### b) Dissolved Oxygen

| Reference reading (mg/L) | Display Reading (mg/L) | Error of indication |
|--------------------------|------------------------|---------------------|
| 0.00                     | 0.00                   | 0.00                |
| 4.02                     | 4.01                   | -0.01               |
| 8.06                     | 8.08                   | 0.02                |

##### c) Conductivity at 25°C

| Reference reading (uS/cm) | Display Reading (uS/cm) | Error of indication (%) |
|---------------------------|-------------------------|-------------------------|
| 147.4                     | 141.5                   | -4.0                    |
| 1431                      | 1506                    | 6.7                     |
| 12846                     | 13484                   | 5.0                     |
| 111310                    | 114392                  | 2.8                     |

##### d) Salinity

| Reference reading (ppt) | Display Reading (ppt) | Error of indication (%) |
|-------------------------|-----------------------|-------------------------|
| 10                      | 9.85                  | -1.5                    |
| 20                      | 20.06                 | 0.3                     |
| 30                      | 30.13                 | 0.4                     |

##### Oxidation-Reduction Potential (ORP)

| Reference reading (mV) | Display Reading (mV) | Error of indication (mV) |
|------------------------|----------------------|--------------------------|
| +230                   | +234                 | +4                       |

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD
2. The Certificate is issued subject to the latest Term and Condition, available accessible at our web site

Page 2 of 3

00312106

Cal Lab Limited  
 Address: Room 2103, Technology Plaza, 29-31 Sha Tsui Road, Tuen Wan, N.T., Hong Kong.  
 Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatesting.org Website: callab.com.hk



## TEST REPORT

Report No. : AA0044844(2)  
 Application No. : LA019477(6)

Date: 01 Sep 2021



e) pH at 25°C

| Reference reading | Display Reading | Error of indication |
|-------------------|-----------------|---------------------|
| 4.00              | 3.99            | -0.01               |
| 6.86              | 6.95            | 0.09                |
| 9.18              | 9.12            | -0.06               |
| 10.01             | 10.03           | 0.02                |

5. Reference method for calibration

|                                     |                   |
|-------------------------------------|-------------------|
| pH at 25°C                          | APHA 21e 4500-H B |
| Dissolved Oxygen                    | APHA 21e 4500-O G |
| Conductivity at 25°C                | APHA 21e 2510 B   |
| Temperature                         | JJG 130-2011      |
| Salinity                            | APHA 21e 2520 B   |
| Oxidation-Reduction Potential (ORP) | APHA 21e 2580 B   |

6. Environment condition of calibration

|                   |            |
|-------------------|------------|
| Temperature       | 18 – 25 °C |
| Relative humidity | < 75 %RH   |

\*\*\* End of Certificate \*\*\*

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD  
 2. The Certificate is issued subject to the latest Term and Conditions, available accessible at our web site

Page 3 of 3  
 0011/1306

Cal Lab Limited  
 Address: Room 2101, Technology Plaza, 29-35 Sha Tin Road, Tuen Wan, NT, Hong Kong  
 Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatesting.org Web Site: http://www.cmatesting.org

## TEST REPORT

Report No. : AA0044844(2)  
 Application No. : LA019477(6)

Date: 01 Sep 2021



### Calibration Certificate

**Certificate No.: CC0172107**

**1. Description**

|                          |                              |
|--------------------------|------------------------------|
| Calibration item :       | a) Turbidity                 |
| Equipment description :  | Portable Turbidimeter        |
| Manufacturer :           | Hach                         |
| Type / Model No. :       | 2100Q                        |
| Serial No. :             | 17070C059801                 |
| Assigned equipment no. : | N/A                          |
| Adjustment :             | N/A                          |
| Remark :                 | Received with good condition |

**2. Customer information**

|                   |   |
|-------------------|---|
| Customer :        | CMA Testing and Certification Laboratories  |
| Address :         | Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung Street, Fotan, Shatin, NT, Hong Kong |
| Date of receipt : | 5 July 2021   |

**3. Date of performance of the calibration**

|                            |                |
|----------------------------|----------------|
| Date of calibration :      | 7 July 2021    |
| Date of next calibration : | 7 October 2021 |



Authorized Signatory  
Warren Yeung



Company Chop:  
Certificate issue date: 9 July 2021

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD  
 2. The Certificate is issued subject to the latest Term and Condition, available accessible at our web site Page 1 of 2  
cc0172107

Cal Lab Limited  
 Address: Room 2105, Technology Plaza, 25-25 Sha Tsui Road, Tszori Wan, NT, Hong Kong.  
 Tel: (852)25680106 Fax: (852)30118194 Email: info@calab.com.hk Website: calab.com.hk

## TEST REPORT

Report No. : AA0044844(2)  
 Application No. : LA019477(6)

Date: 01 Sep 2021



4. Result of Calibration

a) Turbidity

| Reference reading (NTU) | Display Reading (NTU) | Error of indication (%) |
|-------------------------|-----------------------|-------------------------|
| Blank                   | 0.00                  | 0.0                     |
| 10                      | 9.92                  | -0.8                    |
| 20                      | 19.9                  | -0.5                    |
| 100                     | 103                   | 3.0                     |
| 800                     | 802                   | 0.3                     |

5. Reference method for calibration

|           |                |
|-----------|----------------|
| Turbidity | APHA 21e 2130B |
|-----------|----------------|

6. Environment condition of calibration

|                   |            |
|-------------------|------------|
| Temperature       | 18 – 25 °C |
| Relative humidity | < 75 %RH   |

\*\*\* End of Certificate \*\*\*

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD Page 2 of 2  
 2. The Certificate is issued subject to the latest Term and Condition, available onessable at our web site cc0172107

Cal Lab Limited  
 Address: Room 2103, Technology Plaza, 29-35 Sha Tin Road, Tuen Wan, NT, Hong Kong.  
 Tel: (852)25680106 Fax:(852)30116394 Email: info@calab.com.hk Website:calab.com.hk



# TEST REPORT

Report No. : AA0044844(2)  
Application No. : LA019477(6)

Date: 01 Sep 2021



## TEST REPORT

Report No. : AA0039515(1) Date: 04 Aug 2021  
 Application No. : LZ003543(4)  
 Applicant : CMA INDUSTRIAL DEVELOPMENT FOUNDATION LIMITED:  
 ROOM 1302, YAN HING CENTRE,  
 9-13 WONG CHUK YEUNG STREET,  
 FO TAN, SHATIN,  
 N.T., HONG KONG.

Instrument : HACH Portable Colorimeter (DR300)  
 Serial No. : 19030A000277  
 Date Received : 28 Jun 2021.  
 Test Period : 28 Jun 2021 to 30 Jun 2021.  
 Date of next checking : 27 Sep 2021  
 Test Method : APHA 23e 4500Cl-G  
 Test Result : Refer to the results on page 2.

For and on behalf of  
CMA Industrial Development Foundation Limited

Authorized Signature :

Tang Ter Wang  
Manager

Page 1 of 2

The confidentiality statement stated in Conclusion above is based on the decision only agreed with applicant and listed in [www.cmatesting.org/attachment/5/Confidentiality.pdf](http://www.cmatesting.org/attachment/5/Confidentiality.pdf).  
This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org).  
This document shall not be reproduced except in full without written approval by CMA Testing. The results apply to the sample as received unless otherwise specified. The observations and test results in this report are relevant only to the sample tested.

CMA Industrial Development Foundation Limited  
Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.  
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: [info@cmatesting.org](mailto:info@cmatesting.org) Web Site: <http://www.cmatesting.org>

**TEST REPORT**

Report No. : AA0044844(2)  
Application No. : LA019477(6)

Date: 01 Sep 2021



**TEST REPORT**

Report No. : AA0039515(1) Date: 04 Aug 2021  
Application No. : LZ003543(4)  
Test Result :

| Test Item | Reference reading (mg/L) | Display Reading (mg/L) | Error of indication (%) |
|-----------|--------------------------|------------------------|-------------------------|
| Chlorine  | 1.00                     | 1.01                   | 1                       |

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

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