



**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 Effluent Quality Monitoring (EQM) Services**

**Report for the Month of Jan 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 : LA002407(2)

Report Number : AA0006003(9)

Report Issued Date : 04 Feb 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/oac/statement-of-conformity.pdf](http://www.cmateesting.org/oac/statement-of-conformity.pdf)  
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CMA Industrial Development Foundation Limited

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Report No.: AA0006311(0)

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

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**EXECUTIVE SUMMARY**

1. This is the water quality monitoring report prepared by CMA Testing and Certification Laboratory (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 (2020-2023)”. This report documented the results and findings of Operation Phase Environmental Monitoring works conducted for Effluent Quality Monitoring (EQM) of Project in Jan 2021.
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**

<b>Monitoring Parameters</b>	<b>Monitoring Date</b>	<b>Laboratory Testing Parameters</b>
Effluent Quality	15 Jan 2021 to 16 Jan 2021	Total Residual Chlorine (TRC) Chlorination by-products (CBPs) and Contaminants of Concern (COCs)



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## 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 Effluent Quality Monitoring (EQM) of Project on 15 Jan 2021 to 16 Jan 2021.

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## 2. EFFLUENT QUALITY MONITORING

### Monitoring Requirements

- 2.1. Effluent samples were collected at Disinfection Facilities in a full 24-hour period. 24-hour flow weighted composite effluent samples for subsequent chemical analysis and testing were prepared by CMA according to the following procedures:
  - Collect effluent sub-sample by direct grab sampling method at bi-hourly interval over a 24 hour period;
  - Obtain flow record of Stonecutters Island Sewage Treatment Works (SCISTW) for the 24-hour sampling period;
  - Calculate the volume of each sub-sample for preparation the bi-hourly of 24 hour flow-weighted composite samples; and
  - Transfer the appropriate the volume of sub-samples to a clean container and mix thoroughly.
- 2.2. Bi-hourly of 24-hour composite sample for Total Residual Chloride (TRC), Chlorination By-Products (CBPs) and Contaminants of Concern (COCs) tests shall be performed quarterly throughout the contract period.

### Monitoring Location

- 2.3. The sampling locations for effluent from SCISTW were collected at the Disinfection Facilities

### Monitoring Schedule

- 2.4. The effluent quality monitoring was conducted between the time periods of 10:00am 15 Jan 2021 to 10:00am of 16 Jan 2021 in the reporting month. Collection of marine water samples were within the time period of effluent quality monitoring was to be collected.

### Laboratory Measurement / Analysis

- 2.5. In the reporting month, the bi-hourly of 24-hour flow-weighted composite effluent sample was collected for subsequent laboratory analysis and testing on TRC, CBPs and COCs as shown in **Table 2.1**.



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**Table 2.1 Analytical Methods for Laboratory Analysis for Effluent 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 TG-ENV-WW-79 (by GC-ECD)	2
Chloroacetic acid			2
Dibromoacetic acid			2
Dichloroacetic acid			2
Trichloroacetic acid			2
<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			0.5
1,1,2-trichloroethane			0.5
Trichloroethylene			0.5
2-chlorophenol			Phenols & Haloethers
2,4-dichlorophenol	0.5		
p-chloro-m-cresol	0.5		
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) & In house method TG-ENV-WW-86 (by GC-MSD)	0.5
1,4-dichlorobenzene			0.5
Hexachlorobenzene			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		



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### 3. RESULTS AND OBSERVATIONS

#### Effluent Quality

- 3.1. The results of effluent quality monitoring conducted on the time period of 10:00am 15 Jan 2021 to 10:00am of 16 Jan 2021, whereas the laboratory testing and QC report are shown in **Appendix I-Report no. AA006002(8)**.



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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

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





## TEST REPORT

Report No. : AA0006002(8) Date: 04 Feb 2021

Application No. : LA002407(2)

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 : One (1) wastewater sample sampled by the staff of CMA Industrial  
Development Foundation Limited.  
Sample was refrigerated during delivery.

Sample ID : Refer to Sample ID on page 4.

Sampling Location : SCISTW- Disinfection Facilities


Sampling Date : 15 Jan 2021 to 16 Jan 2021.

Date Received : 16 Jan 2021.

Test Period : 16 Jan 2021 to 03 Feb 2021.

For and on behalf of  
CMA Industrial Development Foundation Limited

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

  
Lau Yan Kin  
Senior Manager  
Environmental Division

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## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)

Test Requested :

1. Total Residual Chlorine
2. Bromoform
3. Bromodichloromethane
4. Chloroform
5. Dibromochloromethane
6. Bromoacetic acid
7. Chloroacetic acid
8. Dibromoacetic acid
9. Dichloroacetic acid
10. Trichloroacetic acid
11. Methylene chloride
12. Carbon tetrachloride
13. 1,1-dichloroethane
14. 1,2-dichloroethane
15. 1,1-dichloroethylene
16. 1,2-dichloropropane
17. Tetrachloroethylene
18. 1,1,1-trichloroethane
19. 1,1,2-trichloroethane
20. Trichloroethylene
21. 2-chlorophenol
22. 2,4-dichlorophenol
23. p-chloro-m-cresol
24. Pentachlorophenol
25. 2,4,6-trichlorophenol
26. Bis(2-chloroethoxy) methane
27. Chlorobenzene
28. 1,4-dichlorobenzene
29. Hexachlorobenzene
30. Hexachlorocyclopentadiene
31. Hexachloroethane
32. 1,2,4-trichlorobenzene
33. Alpha-BHC
34. Beta-BHC
35. Gamma-BHC



## TEST REPORT

Report No. : AA0006002(8) Date: 04 Feb 2021

Application No. : LA002407(2)

Test Method : 1. APHA 23ed 4500 Cl G  
2-5. USEPA 8260B  
6-10. TG-ENV-WW-79 (by GC-ECD)  
11-20. ISO 17943:2016 & USEPA 8260B  
21-26. In house method TG-ENV-WW-80, 84 & 86 (by GC-MSD)  
27-35. 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.



## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)

### Effluent Water Quality

Application No.:	LA002407(2)	
Sampling Date	15-Jan-2021 to 16-Jan-2021	
Monitoring Location	Chamber 15A	
<b>Parameter</b>	<b>Results (mg/L)</b>	
Total Residual Chlorine	<0.01	
<b>Parameter</b>	<b>Results (µg/L)</b>	
Bromoform	0.1	
Bromodichloromethane	<0.1	
Chloroform	3.1	
Dibromochloromethane	<5	
Bromoacetic acid	<2	
Chloroacetic acid	<2	
Dibromoacetic acid	2.0	
Dichloroacetic acid	5.5	
Trichloroacetic acid	3.6	

## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)

Application No.:	LA002407(2)
Sampling Date	15-Jan-2021 to 16-Jan-2021
Monitoring Location	Chamber 15A
Parameter	Results (µg/L)
Methylene chloride	<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	<0.5
1,1,2-trichloroethane	<0.5
Trichloroethylene	<0.5
2-chlorophenol	<0.5
2,4-dichlorophenol	<0.5
p-chloro-m-cresol	<0.5
Pentachlorophenol	<0.5
2,4,6-trichlorophenol	<0.5
Bis(2-chloroethoxy) methane	<0.5
Chlorobenzene	<0.5
1,4-dichlorobenzene	<0.5
Hexachlorobenzene	<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





## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)

### 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	110	85-115	105	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	92	80-120	86	70-130	10	≤20
Bromodichloromethane	<0.02	<0.02	107	80-120	79	70-130	7	≤20
Chloroform	<0.02	<0.02	89	80-120	113	70-130	6	≤20
Dibromochloromethane	<1	<1	106	80-120	108	70-130	9	≤20
Bromoacetic acid	<0.4	<0.4	93	80-120	97	70-130	7	≤20
Chloroacetic acid	<0.4	<0.4	98	80-120	78	70-130	11	≤20
Dibromoacetic acid	<0.4	<0.4	91	80-120	87	70-130	15	≤20
Dichloroacetic acid	<0.4	<0.4	113	80-120	105	70-130	8	≤20
Trichloroacetic acid	<0.4	<0.4	116	80-120	109	70-130	8	≤20

## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)

### QC Report

Parameter	Method Blank (µg/L)	Acceptance Criteria (µg/L)	QC Recoery (%)	Acceptance Criteria (%)	Spike Recovery (%)	Acceptance Criteria (%)	Duplicate (RPD) (%)	Acceptance Criteria (%)
Methylene chloride	<4	<4	104	80-120	91	70-130	6	≤20
Carbon tetrachloride	<0.1	<0.1	112	80-120	85	70-130	9	≤20
1,1-dichloroethane	<0.1	<0.1	105	80-120	94	70-130	13	≤20
1,2-dichloroethane	<0.1	<0.1	110	80-120	103	70-130	7	≤20
1,1-dichloroethylene	<0.1	<0.1	94	80-120	81	70-130	9	≤20
1,2-dichloropropane	<0.1	<0.1	106	80-120	93	70-130	11	≤20
Tetrachloroethylene	<0.1	<0.1	83	80-120	97	70-130	5	≤20
1,1,1-trichloroethane	<0.1	<0.1	92	80-120	80	70-130	9	≤20
1,1,2-trichloroethane	<0.1	<0.1	96	80-120	108	70-130	8	≤20
Trichloroethylene	<0.1	<0.1	103	80-120	86	70-130	3	≤20
2-chlorophenol	<0.1	<0.1	85	80-120	104	70-130	12	≤20
2,4-dichlorophenol	<0.1	<0.1	91	80-120	94	70-130	15	≤20
p-chloro-m-cresol	<0.1	<0.1	87	80-120	98	70-130	10	≤20
Pentachlorophenol	<0.1	<0.1	104	80-120	112	70-130	17	≤20
2,4,6-trichlorophenol	<0.1	<0.1	110	80-120	89	70-130	6	≤20
Bis(2-chloroethoxy) methane	<0.1	<0.1	107	80-120	106	70-130	5	≤20
Chlorobenzene	<0.1	<0.1	93	80-120	108	70-130	5	≤20
1,4-dichlorobenzene	<0.1	<0.1	106	80-120	95	70-130	8	≤20
Hexachlorobenzene	<0.005	<0.005	84	80-120	89	70-130	7	≤20
Hexachlorocyclopentadiene	<0.5	<0.5	91	80-120	110	70-130	6	≤20
Hexachloroethane	<0.1	<0.1	98	80-120	116	70-130	7	≤20
1,2,4-trichlorobenzene	<0.1	<0.1	106	80-120	88	70-130	12	≤20
Alpha-BHC	<0.005	<0.005	115	80-120	92	70-130	15	≤20
Beta-BHC	<0.005	<0.005	87	80-120	96	70-130	8	≤20
Gamma-BHC	<0.005	<0.005	86	80-120	107	70-130	16	≤20



## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)



### TEST REPORT

Report No. : AA0006351(4) Date : 08 Jan 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. : 19030A000878  
Date Received : 04 Jan 2021.  
Test Period : 04 Jan 2021 to 06 Jan 2021.  
Date of next checking : 03 Apr 2021  
Test Method : APHA 23c 4500Cl-G  
Test Result : Refer to the results on page 2.

For and on behalf of  
CMA Industrial Development Foundation Limited

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

Tang Tsz Wang  
Manager

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The conformity statement stated in Conclusion above is based on the decision rule agreed with applicant and listed in [www.cmatesting.org/gac/statement-of-conformity.pdf](http://www.cmatesting.org/gac/statement-of-conformity.pdf).  
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## TEST REPORT

Report No. : AA0006002(8)

Date: 04 Feb 2021

Application No. : LA002407(2)



### TEST REPORT

Report No. : AA0006351(4)

Date : 08 Jan 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 \*\*\*\*\*

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CMA Industrial Development Foundation Limited  
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\*\*\*\*\* End of Report \*\*\*\*\*

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