



**CMA Testing  
and Certification  
Laboratories**

廠商會檢定中心

**Term Contract for Provision of Sampling and Analyzing of  
Wastewater and Sludge Samples for Various Sewage Treatment  
Facilities add Marine Water Samples 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 2020**

Contract No. : DE/2018/02

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

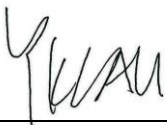
Application Number : LY041452(5)

Report Number : AZ0007449(2)

Report Issued Date : 17 Feb 2020

For and on behalf of  
CMA Industrial Development Foundation Limited

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

  
Lau Yan Kin  
Senior Manager  
Environmental Division



# CMA Testing and Certification Laboratories

廠商會檢定中心

Report No.: AZ0007449(2)

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

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# CMA Testing and Certification Laboratories

廠商會檢定中心

Report No.: AZ0007449(2)

Term Contract for Provision of Sampling and Analyzing of Wastewater  
and Sludge Samples for Various Sewage Treatment Facilities and Marine Water Samples 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/2018/02 ‘Term Contract for Provision of Sampling and analysing of Wastewater and Sludge Samples for Various Sewage Treatment Facilities and Marine Water Samples in Urban Area, Lantau and Outlying Islands to the Drainage Services Department (2018-2020)’. This report documented the results and findings of Operation Phase Environmental Monitoring works conducted for Effluent Quality Monitoring (EQM) of Project in January 2020.
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
Effluent Quality	14 Jan 2020 to 15 Jan 2020	Total Residual Chlorine (TRC) Chlorination by-products (CBPs) and Contaminants of Concern (COCs)



# CMA Testing and Certification Laboratories

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Report No.: AZ0007449(2)

Term Contract for Provision of Sampling and Analyzing of Wastewater  
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Lantau and Outlying Islands to the Drainage Services Department

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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 14 Jan 2020 to 15 Jan 2020.



# CMA Testing and Certification Laboratories

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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 14 Jan 2020 to 10:00am of 15 Jan 2020 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**.



# CMA Testing and Certification Laboratories

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

**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 21ed 4500 Cl G	10
Bromoform	Tri-halomethanes (THMs)	TG-ENV-WW-78 (Headspace GC-MS)	0.1
Bromodichloromethane			0.1
Chloroform			0.1
Dibromochloromethane			5
Bromoacetic acid	Haloacetic Acids (HAAs)	TG-ENV-WW-79 (GC-ECD)	2
Chloroacetic acid			2
Dibromoacetic acid			2
Dichloroacetic acid			2
Trichloroacetic acid			2
<b>Contaminants of Concern (COCs)</b>			
Methylene chloride	Halogenated Aliphatics	TG-ENV-WW-78 (Headspace GC-MS)	20
Carbon tetrachloride			0.5
1,1-dichloroethane			0.5
1,2-dichloroethane			0.5
1,1-dichloroethylene			0.5
1,2-dichloropropane			0.5
Tetrachloroethylene			0.5
1,1,1-trichloroethane			0.5
1,1,2-trichloroethane	Halogenated Aliphatics	TG-ENV-WW-78 (GC-MS)	0.5
Trichloroethylene			0.5
2-chlorophenol	Phenols & Haloethers	TG-ENV-WW-80 (GC-MS)	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	Chlorinated Hydrocarbons & Organochlorine Pesticides	TG-ENV-WW-78 (Headspace GC-MS)	0.5
1,4-dichlorobenzene			0.5
Hexachlorobenzene		USEPA 625	0.01
Hexachlorocyclopentadiene			2.5
Hexachloroethane			0.5
1,2,4-trichlorobenzene			0.5
Alpha-BHC			0.01
Beta-BHC			0.01
Gamma-BHC			0.01



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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 14 Jan 2020 to 10:00am of 15 Jan 2020, whereas the laboratory testing and QC report are shown in **Appendix I-Report no. AZ0007448(1)**.



# CMA Testing and Certification Laboratories

廠商會檢定中心

Report No.: AZ0007449(2)

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

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





# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AZ0007448(1) Date: 17 Feb 2020

Application No. : LY041452(5)

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/2018/02

Project Name : Term Contract for Provision of Sampling and Analyzing of  
Wastewater and Sludge Samples for Various Sewage Treatment  
Facilities and Marine Water Samples 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 : 14 Jan 2020 to 15 Jan 2020.

Date Received : 15 Jan 2020.

Test Period : 15 Jan 2020 to 06 Feb 2020.

For and on behalf of  
CMA Industrial Development Foundation Limited

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

  
Lau Yan Kin  
Senior Manager  
Environmental Division

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# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AZ0007448(1)

Date: 17 Feb 2020

Application No. : LY041452(5)

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



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AZ0007448(1)

Date: 17 Feb 2020

Application No. : LY041452(5)

Test Method : 1. APHA 21ed Cl G  
2. TG-ENV-WW-78 (Headspace GC-MS)  
3. TG-ENV-WW-78 (Headspace GC-MS)  
4. TG-ENV-WW-78 (Headspace GC-MS)  
5. TG-ENV-WW-78 (Headspace GC-MS)  
6. TG-ENV-WW-79 (GC-ECD)  
7. TG-ENV-WW-79 (GC-ECD)  
8. TG-ENV-WW-79 (GC-ECD)  
9. TG-ENV-WW-79 (GC-ECD)  
10. TG-ENV-WW-79 (GC-ECD)  
11. TG-ENV-WW-78 (Headspace GC-MS)  
12. TG-ENV-WW-78 (Headspace GC-MS)  
13. TG-ENV-WW-78 (Headspace GC-MS)  
14. TG-ENV-WW-78 (Headspace GC-MS)  
15. TG-ENV-WW-78 (Headspace GC-MS)  
16. TG-ENV-WW-78 (Headspace GC-MS)  
17. TG-ENV-WW-78 (Headspace GC-MS)  
18. TG-ENV-WW-78 (Headspace GC-MS)  
19. TG-ENV-WW-78 (Headspace GC-MS)  
20. TG-ENV-WW-78 (Headspace GC-MS)  
21. TG-ENV-WW-80 (GC-MS)  
22. TG-ENV-WW-80 (GC-MS)  
23. TG-ENV-WW-80 (GC-MS)  
24. TG-ENV-WW-80 (GC-MS)  
25. TG-ENV-WW-80 (GC-MS)  
26. TG-ENV-WW-80 (GC-MS)  
27. TG-ENV-WW-78 (Headspace GC-MS)  
28. TG-ENV-WW-78 (Headspace GC-MS)  
29. USEPA 625  
30. USEPA 625  
31. USEPA 625  
32. USEPA 625  
33. USEPA 625  
34. USEPA 625  
35. USEPA 625

Test Result : Refer to results on page 4.



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AZ0007448(1)

Date: 17 Feb 2020

Application No. : LY041452(5)

### Effluent Water Quality

Application No.:	LY041452
Sampling Date	14-Jan-20 to 15-Jan-20
Monitoring Location	Chamber 15A
Parameter	Results (mg/L)
Total Residual Chlorine	<0.01
Parameter	Results (µg/L)
Bromoform	0.9
Bromodichloromethane	0.50
Chloroform	0.5
Dibromochloromethane	<5
Bromoacetic acid	<2
Chloroacetic acid	<2
Dibromoacetic acid	<2
Dichloroacetic acid	7.1
Trichloroacetic acid	2.9
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	0.7
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



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Date: 17 Feb 2020

Report No. : AZ0007448(1)

Application No. : LY041452(5)

### QC Report

Sampling Date : 14-Jan-20 to 15-Jan-20

Parameter	Method Blank (mg/L)	Acceptance Criteria (mg/L)	QC Recovery (%)	Acceptance Criteria (%)	Spike Recovery (%)	Acceptance Criteria (%)	Duplicate (%)	Acceptance Criteria (%)
Total Residual Chlorine	<0.01	<0.01	97	85-115	83	85-115	<1	520
Parameter	Method Blank (µg/L)	Acceptance Criteria (µg/L)	QC Recovery (%)	Acceptance Criteria (%)	Spike Recovery (%)	Acceptance Criteria (%)	Duplicate (%)	Acceptance Criteria (%)
Bromoform	<0.02	<0.02	96	80-120	92	70-130	9	520
Bromodichloromethane	<0.02	<0.02	114	80-120	109	70-130	4	520
Chloroform	<0.02	<0.02	113	80-120	114	70-130	14	520
Dibromochloromethane	<1	<1	93	80-120	83	70-130	6	520
Bromoacetic acid	<0.4	<0.4	95	80-120	78	70-130	14	520
Chloroacetic acid	<0.4	<0.4	90	80-120	82	70-130	8	520
Dibromoacetic acid	<0.4	<0.4	96	80-120	86	70-130	12	520
Dichloroacetic acid	<0.4	<0.4	110	80-120	91	70-130	8	520
Trichloroacetic acid	<0.4	<0.4	114	80-120	103	70-130	5	520
Parameter	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Methylene chloride	<4	<4	97	80-120	84	70-130	7	520
Carbon tetrachloride	<0.1	<0.1	106	80-120	104	70-130	7	520
1,1-dichloroethane	<0.1	<0.1	108	80-120	109	70-130	8	520
1,2-dichloroethane	<0.1	<0.1	112	80-120	86	70-130	2	520
1,1-dichloroethylene	<0.1	<0.1	96	80-120	97	70-130	6	520
1,2-dichloropropane	<0.1	<0.1	101	80-120	93	70-130	9	520
Tetrachloroethylene	<0.1	<0.1	93	80-120	112	70-130	14	520
1,1,1-trichloroethane	<0.1	<0.1	96	80-120	106	70-130	12	520
1,1,2-trichloroethane	<0.1	<0.1	104	80-120	84	70-130	7	520
Trichloroethylene	<0.1	<0.1	93	80-120	95	70-130	10	520
2-chlorophenol	<0.1	<0.1	93	80-120	91	70-130	4	520
2,4-dichlorophenol	<0.1	<0.1	102	80-120	82	70-130	6	520
p-chloro-m-cresol	<0.1	<0.1	106	80-120	89	70-130	6	520
Pentachlorophenol	<0.1	<0.1	108	80-120	93	70-130	9	520
2,4,6-trichlorophenol	<0.1	<0.1	104	80-120	93	70-130	14	520
Bis(2-chloroethoxy) methane	<0.1	<0.1	109	80-120	88	70-130	11	520
Chlorobenzene	<0.1	<0.1	111	80-120	104	70-130	12	520
1,4-dichlorobenzene	<0.1	<0.1	92	80-120	81	70-130	9	520
Hexachlorobenzene	<0.005	<0.005	95	80-120	96	70-130	8	520
Hexachlorocyclopentadiene	<0.5	<0.5	104	80-120	88	70-130	6	520
Hexachloroethane	<0.1	<0.1	93	80-120	103	70-130	7	520
1,2,4-trichlorobenzene	<0.1	<0.1	105	80-120	96	70-130	10	520
Alpha-BHC	<0.005	<0.005	94	80-120	102	70-130	4	520
Beta-BHC	<0.005	<0.005	92	80-120	108	70-130	6	520
Gamma-BHC	<0.005	<0.005	111	80-120	104	70-130	6	520



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AZ0007448(1)

Date: 17 Feb 2020

Application No. : LY041452(5)



### CMA Testing and Certification Laboratories


廠商會檢定中心

#### TEST REPORT

Report No. : AZ0008291(9) Date : 25 Feb 2020  
Application No. : LZ003544(5)  
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 : 03 Jan 2020.  
Test Period : 06 Jan 2020 to 06 Jan 2020.  
Date of next checking : 05 Apr 2020  
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 Tsz Wang  
Deputy Manager

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廠商會檢定中心

## TEST REPORT

Report No. : AZ0007448(1)

Date: 17 Feb 2020

Application No. : LY041452(5)



### CMA Testing and Certification Laboratories

廠商會檢定中心

#### TEST REPORT

Report No. : AZ0008291(9)

Date : 25 Feb 2020

Application No. : LZ003544(5)

Test Result :

Test Item	Reference reading (mg/L)	Display Reading (mg/L)	Error of indication (%)
Chlorine	1.00	0.97	-3

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

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