



**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 Oct 2022**

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 : LB028479(8)

Report Number : AB0049129(3)

Report Issued Date : 18 Nov 2022

*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.cmatesting.org/oac/statement-of-conformity.pdf](http://www.cmatesting.org/oac/statement-of-conformity.pdf)  
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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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**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 Oct 2022.
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 1**.

**Table 1. Summary Table for Environmental Monitoring Works Conducted in the Reporting Month**

<b>Monitoring Parameters</b>	<b>Monitoring Period</b>	<b>Laboratory Testing Parameters</b>
Effluent Quality	28 Oct 2022 (10 a.m.) to 29 Oct 2022 (10 a.m.)	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 monitoring period.

## 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 Testing according to the following procedures:
  - Collect effluent sub-sample by direct grab sampling method at bi-hourly interval over a 24 hour sampling 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 preparing the bi-hourly of 24 hour flow-weighted composite samples; and
  - Transfer the appropriate volume of sub-samples to a clean container and mix thoroughly.
- 2.2. Bi-hourly of 24 hour composite sample for 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 in the monitoring period shown in **Table 1**. 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 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>Potential CBPs</b>			
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 during the monitoring period shown in **Table 1**, whereas the laboratory testing and QC report are shown in **Appendix I**.



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)**





**TESTING**

**TEST REPORT**

Report No. : AB0049130(6) Date: 16 Nov 2022

Application No. : LB028479(8)

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 : Bi-hourly of 24-hour flow-weighted composite effluent sample was collected by the staff of CMA Industrial Development Foundation Limited.  
Sample was refrigerated during delivery.

Sample ID : Refer to Sample ID on page 3 - 4.

Sampling Location : SCISTW- Disinfection Facilities


Sampling Date : 28 Oct 2022 to 29 Oct 2022.

Date Received : 29 Oct 2022.

Test Period : 01 Nov 2022 to 04 Nov 2022.

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

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

  
Lau Yan Kin  
Senior Manager  
Environmental Division

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**TESTING**

**TEST REPORT**

Report No. : AB0049130(6)

Date: 16 Nov 2022

Application No. : LB028479(8)

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

Test Method : 1-4. USEPA 8260B  
5-9. TG-ENV-WW-79 (by GC-ECD)  
10-19. ISO 17943:2016 & USEPA 8260B  
20-25. In house method TG-ENV-WW-80, 84 & 86 (by GC-MSD)  
26-34. 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 3 - 4.

## TEST REPORT

Report No. : AB0049130(6)

Date: 16 Nov 2022

Application No. : LB028479(8)

Effluent Water Quality

Application No.:	LB028479	
Sampling Date	28-Oct-22 to 29-Oct-22	
Monitoring Location	Chamber 15A	
Parameter	Results (µg/L)	Discharge limit (measured in HATS effluent) (µg/L)
Bromoform	0.1	16,000
Bromodichloromethane	<0.1	1,000
Chloroform	1.2	560
Dibromochloromethane	<5	1,500
Bromoacetic acid	<2	75,000
Chloroacetic acid	<2	1,500,000
Dibromoacetic acid	<2	32,000
Dichloroacetic acid	2.1	10,000
Trichloroacetic acid	<2	4,300,000

\*TRC is <0.01 by reference to Chamber 15A Sampling Tanks Daily Monitoring result on 28-Oct-2022.



TESTING

## TEST REPORT

Report No. : AB0049130(6)

Date: 16 Nov 2022

Application No. : LB028479(8)

Application No.:	LB028479
Sampling Date	28-Oct-22 to 29-Oct-22
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. : AB0049130(6)

Date: 16 Nov 2022

Application No. : LB028479(8)

### QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Bromoform	<0.02	<0.02	92	80-120	95	70-130	10	≤20
Bromodichloromethane	<0.02	<0.02	89	80-120	92	70-130	7	≤20
Chloroform	<0.02	<0.02	96	80-120	100	70-130	12	≤20
Dibromochloromethane	<1	<1	90	80-120	94	70-130	5	≤20
Bromoacetic acid	<0.4	<0.4	95	80-120	99	70-130	13	≤20
Chloroacetic acid	<0.4	<0.4	91	80-120	96	70-130	9	≤20
Dibromoacetic acid	<0.4	<0.4	99	80-120	105	70-130	11	≤20
Dichloroacetic acid	<0.4	<0.4	103	80-120	107	70-130	7	≤20
Trichloroacetic acid	<0.4	<0.4	97	80-120	101	70-130	10	≤20



## TEST REPORT

Report No. : AB0049130(6)

Date: 16 Nov 2022

Application No. : LB028479(8)

### QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Methylene chloride	<4	<4	97	80-120	103	70-130	14	≤20
Carbon tetrachloride	<0.1	<0.1	101	80-120	105	70-130	8	≤20
1,1-dichloroethane	<0.1	<0.1	94	80-120	98	70-130	6	≤20
1,2-dichloroethane	<0.1	<0.1	88	80-120	93	70-130	5	≤20
1,1-dichloroethylene	<0.1	<0.1	95	80-120	97	70-130	9	≤20
1,2-dichloropropane	<0.1	<0.1	99	80-120	102	70-130	13	≤20
Tetrachloroethylene	<0.1	<0.1	102	80-120	105	70-130	10	≤20
1,1,1-trichloroethane	<0.1	<0.1	93	80-120	97	70-130	12	≤20
1,1,2-trichloroethane	<0.1	<0.1	98	80-120	104	70-130	8	≤20
Trichloroethylene	<0.1	<0.1	100	80-120	106	70-130	9	≤20
2-chlorophenol	<0.1	<0.1	103	80-120	108	70-130	11	≤20
2,4-dichlorophenol	<0.1	<0.1	105	80-120	101	70-130	14	≤20
p-chloro-m-cresol	<0.1	<0.1	97	80-120	94	70-130	7	≤20
Pentachlorophenol	<0.1	<0.1	107	80-120	102	70-130	9	≤20
2,4,6-trichlorophenol	<0.1	<0.1	101	80-120	97	70-130	13	≤20
Bis(2-chloroethoxy) methane	<0.1	<0.1	110	80-120	105	70-130	12	≤20
Chlorobenzene	<0.1	<0.1	105	80-120	100	70-130	10	≤20
1,4-dichlorobenzene	<0.1	<0.1	100	80-120	103	70-130	14	≤20
Hexachlorobenzene	<0.005	<0.005	95	80-120	93	70-130	8	≤20
Hexachlorocyclopentadiene	<0.5	<0.5	90	80-120	96	70-130	16	≤20
Hexachloroethane	<0.1	<0.1	91	80-120	94	70-130	12	≤20
1,2,4-trichlorobenzene	<0.1	<0.1	87	80-120	91	70-130	5	≤20
Alpha-BHC	<0.005	<0.005	93	80-120	97	70-130	10	≤20
Beta-BHC	<0.005	<0.005	98	80-120	101	70-130	13	≤20
Gamma-BHC	<0.005	<0.005	91	80-120	95	70-130	11	≤20

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