

# Environmental Monitoring Report

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Project Number: 51077-003  
Quarterly Report (October to December 2022)  
March 2023

## Maldives: Greater Male Waste-to-Energy Project

### Part C: Appendices

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# TEST REPORT



Report No: (7422)334-0401

Dec 14, 2022

Page 2 of 2

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	Free Ammonia (as NH <sub>3</sub> )*	ND	0.02	mg/L	SLS 614 Appendix A: 2013
2	Biological Oxygen Demand (BOD <sub>5</sub> ) @ 20°C	2	-	mg/L	APHA 23rd ed: 2017 : 5210D
3	Total Suspended Solids (TSS)	8	-	mg/L	APHA 23rd ed: 2017 : 2540D
4	Salinity*	36	-	‰	Salinity-Refractometer
5	Nitrate (as NO <sub>3</sub> <sup>-</sup> )*	0.4	-	mg/L	APHA 23rd ed: 2017: 4500 -NO <sub>3</sub> - B
6	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
7	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
8	Copper (as Cu)	ND	0.001	mg/L	
9	Nickel (as Ni)	ND	0.001	mg/L	
10	Cadmium (as Cd)	ND	0.0001	mg/L	
11	Total Chromium (as Cr)	ND	0.001	mg/L	
12	Lead (as Pb)	ND	0.001	mg/L	
13	Mercury (as Hg)	ND	0.00005	mg/L	
14	Zinc (as Zn)	ND	0.001	mg/L	

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

### NOTE:

APHA: American Public Health Association, ND: Not Detected,

LOQ: Limit of Quantification, µm: micrometer,

mg/l: milligrams per liter, ‰: Parts per thousand.

### Contact information for this report (Technical and General Inquiries and Feedback)

<b>GENERAL INQUIRIES:</b>		
JAYAMEE DISSANAYAKE	TEL: +94 768 229 495	E-MAIL: envlab.lanka@bureauveritas.com
<b>TECHNICAL INQUIRIES:</b>		
RUWANI AMARASINGHE	TEL: +94 768 229 457	E-MAIL: ruwani.amarasinghe@bureauveritas.com
<b>FEED BACK:</b>		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY: \_\_\_\_\_  
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**

## **Appendix 3: Test Results of Marine Water and Groundwater**

### **Ground Water Quality**



# TEST REPORT



Report No: (7422)334-0408

Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-01  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvcps.lanka@lk.bureauveritas.com](mailto:bvcps.lanka@lk.bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0408

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.3	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.4	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	481	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	ND	1	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0408

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

APHA: American Public Health Association,

ND: Not Detected,

LOQ: Limit of Quantification, mg/L: milligrams per liter,

NTU: Nephelometric Turbidity Units, °C :Celcius,

µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry

**Contact information for this report (Technical and General Inquiries and Feedback)**

GENERAL INQUIRIES:		
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REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:

RUWANI AMARASINGHE

ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**



# TEST REPORT



Report No: (7422)334-0353

Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-02  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
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# TEST REPORT



Report No: (7422)334-0353

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.2	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.2	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	58000	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	ND	1	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0353

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

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NTU: Nephelometric Turbidity Units, °C :Celcius,

µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry

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<b>FEED BACK:</b>		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:

RUWANI AMARASINGHE

ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**



# TEST REPORT



Report No: (7422)334-0367

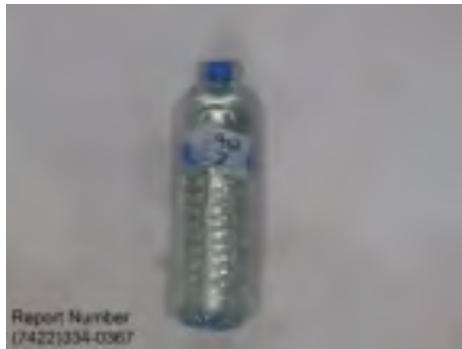
Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-03  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
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# TEST REPORT



Report No: (7422)334-0367

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	8.5	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.3	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	10800	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	ND	-	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0367

Dec 22, 2022

Page 3 of 3

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LOQ: Limit of Quantification, mg/L: Milligrams per liter,

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µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry.

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REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:

RUWANI AMARASINGHE

ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**



# TEST REPORT



Report No: (7422)334-0378

Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21 , 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-04  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
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# TEST REPORT



Report No: (7422)334-0378

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.6	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.1	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	5700	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	ND	1	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0378

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

APHA: American Public Health Association,

ND: Not Detected,

LOQ: Limit of Quantification, mg/L: milligrams per liter,

NTU: Nephelometric Turbidity Units, °C :Celcius,

µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry

**Contact information for this report (Technical and General Inquiries and Feedback)**

<b>GENERAL INQUIRIES:</b>		
JAYAMEE DISSANAYAKE	TEL: +94 768 229 495	E-MAIL: envlab.Lanka@bureauveritas.com
<b>TECHNICAL INQUIRIES:</b>		
RUWANI AMARASINGHE	TEL: +94 768 229 457	E-MAIL: ruwani.amarasinghe@bureauveritas.com
<b>FEED BACK:</b>		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY: \_\_\_\_\_  
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**





# TEST REPORT



Report No: (7422)334-0405

Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-06  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvcps.lanka@lk.bureauveritas.com](mailto:bvcps.lanka@lk.bureauveritas.com)

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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# TEST REPORT



Report No: (7422)334-0405

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.6	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.5	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	1206	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	6	-	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	0.018	-	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0405

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

APHA: American Public Health Association,

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LOQ: Limit of Quantification, mg/L: milligrams per liter,

NTU: Nephelometric Turbidity Units, °C :Celcius,

µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry

**Contact information for this report (Technical and General Inquiries and Feedback)**

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RUWANI AMARASINGHE	TEL: +94 768 229 457	E-MAIL: ruwani.amarasinghe@bureauveritas.com
FEED BACK:		
KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY: \_\_\_\_\_  
RUWANI AMARASINGHE  
ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**



# TEST REPORT



Report No: (7422)334-0375

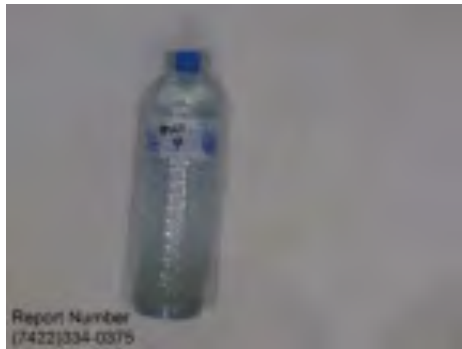
Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-07  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
112622198 & 199  
Email: [bvcps.lanka@lk.bureauveritas.com](mailto:bvcps.lanka@lk.bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0375

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.5	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	2.8	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	571	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	38	-	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	0.02	-	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	

# TEST REPORT



Report No: (7422)334-0375

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

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LOQ: Limit of Quantification, mg/L: milligrams per liter,

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µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

ICP-MS: Inductively Coupled Plasma Mass Spectrometry

**Contact information for this report (Technical and General Inquiries and Feedback)**

<b>GENERAL INQUIRIES:</b>		
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KUMUDINI RATHNAYAKE – ASST. QA MANAGER	TEL: +94 768 229 455	E-MAIL: kumudinie.rathnayake@bureauveritas.com

REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:

RUWANI AMARASINGHE

ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**



# TEST REPORT



Report No: (7422)334-0411

Dec 22, 2022

Page 1 of 3

Attn: Servet Burak Ozdemir

**Customer:** Alke – Alkataş Joint Venture (Pvt) Ltd  
**Address :** H.H. Moomiyaage, 5A, Asaree Hingun 20265, K. Male', Maldives  
**Date of Sample Received:** Nov 30, 2022  
**Date of Testing Started:** Nov 30, 2022  
**Date of Testing Completed:** Dec 21, 2022  
**Sample Description:** **Sample Received as:**  
A water samples contained in sealed glass & plastic bottles  
**Sample Identified by the Client as:**  
GW-08  
1.5L x 2 Plastic Bottles & 1L x 2 Glass Bottles  
**Sample Drawn By BVCPS** NO

## Photo of the Submitted Samples



**Bureau Veritas Consumer  
Products Services Lanka (Pvt)  
Ltd.**

No. 570, Galle Road, Katubedda, Moratuwa, Sri Lanka  
Tel: (9411) 2350111-115 (dedicated lines), Fax: (9411)  
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Email: [bvcps.lanka@lk.bureauveritas.com](mailto:bvcps.lanka@lk.bureauveritas.com)

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# TEST REPORT



Report No: (7422)334-0411

Dec 22, 2022

Page 2 of 3

## TEST RESULTS

No.	Parameters	Results	LOQ	Unit	Test Method
1	pH at 25°C	7.6	-	-	APHA 23rd ed: 2017: 4500H+B
2	Turbidity	0.5	-	NTU	APHA 23rd ed: 2017 :2130 B
3	Electrical Conductivity at 25°C	582	-	µS/cm	APHA 23rd ed: 2017: 2510 B
4	Total Suspended Solids (TSS)	13	-	mg/L	APHA 23rd ed: 2017 : 2540D
5	Oil & Grease	ND	2.0	mg/L	APHA 23rd ed: 2017 :5520B
6	Arsenic (as As)	ND	0.001	mg/L	CPSD-AN-00581: 2019 V15 by ICP-MS
7	Iron (as Fe)	ND	0.001	mg/L	
8	Manganese (as Mn)	ND	0.001	mg/L	
9	Cadmium (as Cd)	ND	0.0001	mg/L	
10	Lead (as Pb)	ND	0.001	mg/L	
11	Mercury (as Hg)	ND	0.00005	mg/L	

No.	Parameters	Results	LOQ	Unit	Test Method
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>					
1	Naphthalene	ND	1.0	µg/l	CPSD –AN-00576:2019 V15 (In house method)
2	Benzo(a)anthracene	ND	1.0	µg/l	
3	Acenaphthylene	ND	1.0	µg/l	
4	Acenaphthene	ND	1.0	µg/l	
5	Fluorene	ND	1.0	µg/l	
6	Phenanthrene	ND	1.0	µg/l	
7	Anthracene	ND	1.0	µg/l	
8	Fluoranthene	ND	1.0	µg/l	
9	Pyrene	ND	1.0	µg/l	
10	Chrysen	ND	1.0	µg/l	
11	Benzo(b)fluoranthene	ND	1.0	µg/l	
12	Benzo(k)fluoranthene	ND	1.0	µg/l	
13	Dibenzo(a,h)anthracene	ND	1.0	µg/l	
14	Benzo(g,h,i)perylene	ND	1.0	µg/l	
15	Benzo(j)fluoranthene	ND	1.0	µg/l	
16	Benzo(a)pyrene*	ND	1.0	µg/l	
17	Benzo(e)pyrene*	ND	1.0	µg/l	
18	Indeno(1,2,3-cd) pyrene*	ND	1.0	µg/l	



# TEST REPORT



Report No: (7422)334-0411

Dec 22, 2022

Page 3 of 3

\*Test not covered ISO 17025: 2017 by Sri Lanka Accreditation Board for conformity assessment.

**NOTE:**

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µg/L: Micrograms per liter, µS/cm: Micro Siemens per Centimeter,

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REVIEWED BY: SHASHI MANOJ

BUREAU VERITAS CONSUMER PRODUCTS SERVICES LANKA (PVT) LTD.  
AUTHORIZED SIGNATORY

APPROVED BY:

RUWANI AMARASINGHE

ASSISTANT MANAGER –  
FOOD & MICROBIOLOGY LABORATORY

**END OF THE REPORT**

**WATER QUALITY TEST REPORT**  
 Report No: 500193926

**Customer Information:**  
 Alke Alkatas Joint Venture Pvt Ltd  
 C02782022

Report date: **07/12/2022**  
 Test Requisition Form No: **900196083**  
 Sample(s) Recieved Date: **01/12/2022**  
 Date of Analysis: **01/12/2022 - 06/12/2022**

Sample Description ~	GW6	GW7	GW1	TEST METHOD	UNIT
Sample Type ~	Ground Water	Ground Water	Ground Water		
Sample No	83234209	83234210	83234211		
Sampled Date ~	29/11/2022 02:26	29/11/2022 02:26	29/11/2022 02:26		
PARAMETER	ANALYSIS RESULT				
Physical Appearance	Clear with particles	Cloudy with particles	Clear with particles		
Chloride	188	14	99	In-house Test method (Adapted from M926 Chloride analyzer Operation Manual)	mg/L
Nitrate *	0.3	1.0	0.3	HACH Method 8171	mg/L
Sulphate *	95	16	<10 (LoQ 10 mg/L )	HACH Method 8051	mg/L
Phosphate *	0.15	0.23	0.05	HACH Method 8048	mg/L
Dissolved Oxygen (DO)	8.60	9.02	8.87	In-house Test method (Adapted from HACH BOD LDO® Probe (Model LBOD10101) manual)	mg/L
Biological Oxygen Demand (BOD)	6	3	3	HACH Method 8043	mg/L
Total Coliforms	>2420 (01/12/2022 15:00)	>2420 (01/12/2022 15:00)	>2420 (01/12/2022 15:00)	Colilert®-18/Quanti-Tray®2000	MPN/100ml

**Keys:** mg/L : Milligram Per Liter, **MPN/100ml** : Most Probable Number

Checked by

Nihaz A. Zahir  
 Assistant Quality Manager

Approved by

Mohamed Eyman  
 Assistant General Manager, Quality

**Notes:**

Sampling Authority: Sampling was not done by MWSC Laboratory.  
 This report shall not be reproduced except in full, without written approval of MWSC.  
 This test report is ONLY FOR THE SAMPLES TESTED.  
 ~ Information provided by the customer. This information may affect the validity of the test results.  
 \*Parameters accredited by EIAC under ISO/IEC 17025:2017



**LB-TEST-090**

**WATER QUALITY TEST REPORT**

Report No: 500193926

**Customer Information:**

Alke Alkatas Joint Venture Pvt Ltd  
 C02782022

Report date: **07/12/2022**  
 Test Requisition Form No: **900196083**  
 Sample(s) Recieved Date: **01/12/2022**  
 Date of Analysis: **01/12/2022 - 06/12/2022**

Sample Description ~	GW2	GW3	GW8	TEST METHOD	UNIT
Sample Type ~	Ground Water	Ground Water	Ground Water		
Sample No	83234212	83234213	83234214		
Sampled Date ~	29/11/2022 02:26	29/11/2022 02:26	29/11/2022 02:26		
PARAMETER	ANALYSIS RESULT				
Physical Appearance	Clear with particles	Pale yellow with particles	Clear with particles		
Chloride	21100	3750	49	In-house Test method (Adapted from M926 Chloride analyzer Operation Manual)	mg/L
Nitrate *	3.9	4.6	0.1	HACH Method 8171	mg/L
Sulphate *	3050	225	41	HACH Method 8051	mg/L
Phosphate *	0.10	0.32	0.06	HACH Method 8048	mg/L
Dissolved Oxygen (DO)	8.92	9.07	8.81	In-house Test method (Adapted from HACH BOD LDO® Probe (Model LBOD10101) manual)	mg/L
Biological Oxygen Demand (BOD)	3	3	4	HACH Method 8043	mg/L
Total Coliforms	3 (01/12/2022 15:00)	>2420 (01/12/2022 15:00)	>2420 (01/12/2022 15:00)	Colilert®-18/Quanti-Tray®2000	MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by

Nihaz A. Zahir  
 Assistant Quality Manager

Approved by

Mohamed Eyman  
 Assistant General Manager, Quality

**Notes:**

Sampling Authority: Sampling was not done by MWSC Laboratory.

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\*Parameters accredited by EIAC under ISO/IEC 17025:2017

\*\*\*\*\* END OF REPORT \*\*\*\*\*

## **Appendix 3: Test Results of Marine Water and Groundwater**

### **Ground Water Quality**

### Induction

- On 17<sup>th</sup> October 4 Visitors were inducted (Urbaser, Fichtner MoE and AAJV)



### Training

- 15.10.2022 Emergency Response Training conducted for 16 personals.





Design, Build and Operate of a Waste to Energy Facility at Thilafushi  
Contract No: (AGR)438-WPMC/PRIV/2021/71

### HSE MONTHLY REPORT

### HSE Induction

- On 8<sup>th</sup> November 7 AAJV personals were HSE inducted
- On 9<sup>th</sup> November ADB, WAMCO and MoE personals were HSE inducted



### Training

- On 20<sup>th</sup> November Health awareness training conducted for 20 AAJV personals
- On 22<sup>nd</sup> November First aid training ( BLS) given by third party training provider for 8 AAJV personals







### Tool Box Talk

- This month 26 nos Tool box conducted including subcontractor
- Topic was covered as below
  - Manual Handling
  - Slip, Trip & Fall hazards
  - Working at height
  - Adverse weather condition
  - Sewage vacuum truck operation
  - Emergency Response
  - Electrical Hazards
  - Power Tools
  - Chemical Handling
  - Housekeeping
  - PPE
  - Lifting Hazards
  - Upcoming Management visit at site



### Senior Management Visit

- On 9<sup>th</sup> November Senior Management from ADB, WAMCO and MoE visited at site
- On 30<sup>th</sup> November Senior Management from, Urbaser Ramboll, and AAJV visited at site





**Design, Build and Operate of a Waste to Energy Facility at Thilafushi**  
**Contract No: (AGR)438-WPMC/PRIV/2021/71**

**HSE MONTHLY REPORT**

**HSE Induction**

No HSE Induction for this month

**Training**

- On 10<sup>th</sup> December PPE Awareness training conducted for 20 AAJV personals
- On 11<sup>th</sup> December Chemical Handling Training Conducted
- On 24<sup>th</sup> December Covid 19 Awareness training conducted



**Tool Box Talk**

- This month 26 nos Tool box conducted including subcontractor
- Topic was covered as below
  - Manual Handling
  - Slip, Trip & Fall hazards
  - Working at height
  - Adverse weather condition
  - Sewage vacuum truck operation
  - Emergency Response
  - Electrical Hazards
  - Power Tools
  - Chemical Handling
  - Housekeeping
  - PPE
  - Lifting Hazards





### Senior Management Visit

On 13<sup>th</sup> Management visit by Ramboll



### HSE Management Meeting

- On 7<sup>th</sup> December HSE Meeting conducted review of outstanding HSE inspection tracker
- On 14<sup>th</sup> December HSE Meeting Conducted
- On 21<sup>st</sup> December HSE Meeting Conducted
- On 24<sup>th</sup> December HSE Meeting Conducted



## Appendix 5: Scope of work of PACCB consultants

Sl.No.	Expected Outputs	Expected Activities
1	Enhance awareness, behaviour change and community participation in SWM and 3R	<p><b>a) Prepare clear plans and communication strategy for public awareness, behaviour change and community participation, in Greater Malé and outer islands</b></p> <ul style="list-style-type: none"> <li>(i) Conduct stakeholder analysis and capacity assessment of SWM related institutions;</li> <li>(ii) Conduct formative research through interviews/ consultations with key stakeholders, focussed group discussions, and studying the communication experience in SWM in of agencies such as UNDP, World Bank, ICRC, WAMCO, and PARLEY<sup>1</sup> in Maldives;</li> <li>(iii) Design awareness programs and strategy (both for Greater Malé and outer islands) through social and traditional media for wider coverage as required by the project and in line with international best practices in 3R and national SWM policy;<sup>2</sup></li> <li>(iv) Develop an effective and comprehensive communication strategy and program for motivating all stakeholder at different levels to participate for the successful implementation of the project and its components;</li> <li>(v) Elaborate a comprehensive awareness campaign for educational institutions targeting the youth to sustain the success of IEC activities over the long term;</li> <li>(vi) Prepare an implementation, monitoring and evaluation plan of activities, both for Greater Malé and outer islands;</li> </ul> <p><b>a) Design communication materials, mostly in Divehi, inline with plan and strategy developed(a.)</b></p> <ul style="list-style-type: none"> <li>(i) Design detailed awareness and communication materials for dissemination through social and traditional media for wider coverage as required by the project.</li> <li>(ii) Pilot/test and evaluate communication materials with target audience, both in Greater Malé and outer islands;</li> <li>(iii) Develop final design of awareness and communication materials;</li> <li>(iv) Deliver the material for implementing public awareness campaigns both in Greater Malé and outer islands.</li> </ul> <p><b>b) Conduct public awareness campaigns/activities in Greater Malé and outer islands</b></p> <ul style="list-style-type: none"> <li>(i) Conduct awareness activities, including media campaigns and material dissemination, before and during project implementation, in line with the plan and communication</li> </ul>



Sl.No.	Expected Outputs	Expected Activities
		<p>strategy developed in(a.);</p> <p>(ii) Involve and coordinate with community, community-based organizations, NGOs, elected representatives, development partners such as UNDP, World Bank, ICRC, and other relevant organizations in awareness and behaviour change campaigns;</p> <p>(iii) Engage and train Schools Environmental Clubs to continuously run awareness campaigns and training programs in their respective islands</p> <p>(iv) Engage with tourist facility providers including resorts, guesthouses etc. to run awareness campaigns and training programs on sustainable waste management and its implications for sustainable tourism;</p> <p>(v) Promote good sanitation behaviour at all levels to facilitates sound solid waste management systems which may include:</p> <ul style="list-style-type: none"> <li>a. Adapt daily habits to agreed solid waste system (rules, schedules, e.g.to offer it at the right time and place to the collection team)</li> <li>b. Bring waste to collection point for transfer</li> <li>c. Segregate waste in designated bin or bags</li> <li>d. Cooperate in clean-up campaigns-keep house and surrounding environment clean</li> </ul> <p>(vi) Communicate the role of women and scope for public involvement in improved solid waste management activity, in line with 3R; this will include adoption of practices at the household level that reduce waste generation (including reduced use of disposable plastics) and the separation of compostable and recyclable waste, and eliciting participation in community level activity and schools;</p> <p>(vii) Encourage each household and community to segregate waste, compost organic waste and use compost through appropriate provision of incentives (e.g. distribution of bins, free health camps and tools);</p> <p>(viii) Ensure 3R household and community level activities are integrated into overall solid waste management practices, strategy and plan (waste collection, transportation, processing, recovery and disposal) of WAMCO;</p> <p>(ix) Sensitize and motivate stakeholders to desist from illegal dumping and burning of waste, including showcasing adverse environmental and health impacts.</p> <p>(x) Assist the PMU to implement and report on gender related activities and indicators in the project design and monitoring framework;</p> <p>(xi) Conduct consultations with surrounding landowners / users / communities around project sites in coordination with the PMU IEC and Environmental Safeguards personnel and PMDCSC and report on the same in the quarterly progress reports;</p>

Sl.No.	Expected Outputs	Expected Activities
		<ul style="list-style-type: none"> <li>(xii) Communicate the benefits of the project to the community and generate awareness among stakeholders on the waste to energy component designed to meet international standards and the importance of paying tariff for sustainable service delivery;</li> <li>(xiii) Report on public awareness generation, communication activities, maintaining sex-disaggregated data, minutes of meetings and photographic records, and present the same in the quarterly progress reports; and</li> <li>(xiv) Assist the PMU with project information disclosure requirements to stakeholders in line with ADB's Access to Information Policy, 2018.</li> </ul>
<p>1 PARLEY is an NGO working in the recycling sector to reduce plastics in the marine environment.</p> <p>2 Activities should at least include: (i) basic information dissemination on project design in line with international standards; (ii) address concerns of the public related to incineration, if any; (iii) waste categorization; (iv) the impact of pollution due to open dumping and burning of waste and consequence on public and environmental health; (v) benefits of 3R such as reducing plastic bags/bottled water, waste segregation, recycling, composting, compost use in gardening/agriculture and waste-to-energy; (vi) risks associated with hazardous waste handling; (vii) benefits of SWM services and importance of service fees for sustainability.</p>		