



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13405



Request No.	: WA-Q-L-2007-02011	Sample No.	: WA-S-L-2007-12943
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Addex Tower 1 & 2 Reem Island, Abu Dhabi	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1231	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: ETS Room C1 Building
Sampling Point	: Low Zone - Basement 2 - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected= \leq 1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Wimpey Laboratories LLC

P.O. Box 115086, Musaffah M-34, Abu Dhabi, U.A.E.
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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13405

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13406



Request No.	: WA-Q-L-2007-02011	Sample No.	: WA-S-L-2007-12944
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Addex Tower 1 & 2 Reem Island, Abu Dhabi	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1231	Sampling Method	: BS 7592
Temperature °C	: 9.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: ETS Room C1 Building
Sampling Point	: Low Zone - Basement 2 - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: ADDEX TOWER C1	SAMPLE POINT: LOCATION: CHILLER ROOM (LOW ZONE)

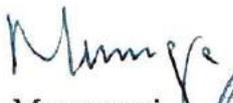
CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
Ph	9.0 - 10.5	10.29
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2098
TDS, ppm	--	1364
Iron, ppm as Fe	0 - 2.0	0.15
Treatment Residuals		
Nitrite, ppm	> 800	970
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer





Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13407



Request No.	: WA-Q-L-2007-02011	Sample No.	: WA-S-L-2007-12945
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Addex Tower 1 & 2 Reem Island, Abu Dhabi	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1231	Sampling Method	: APHA 9060 A&B
Temperature °C	: 10.2°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: ETS Room C1 Building
Sampling Point	: High Zone - 31st Floor - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected= \leq 1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13407

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13408



Request No.	: WA-Q-L-2007-02011	Sample No.	: WA-S-L-2007-12946
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Addex Tower 1 & 2 Reem Island, Abu Dhabi	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1231	Sampling Method	: BS 7592
Temperature °C	: 10.2°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: ETS Room C1 Building
Sampling Point	: High Zone - 31st Floor - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: ADDEX TOWER C1	SAMPLE POINT: LOCATION: CHILLER ROOM (HIGH ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
Ph	9.0 - 10.5	10.47
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2059
TDS, ppm	--	1338
Iron, ppm as Fe	0 - 2.0	0.07
Treatment Residuals		
Nitrite, ppm	> 800	960
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer





Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13423



Request No.	: WA-Q-L-2007-02014	Sample No.	: WA-S-L-2007-12961
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Building C2 & C3 Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1232	Sampling Method	: APHA 9060 A&B
Temperature °C	: 10.5°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C2 Building - ETS Room
Sampling Point	: Marina Bay 01 Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13423

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13426



Request No.	: WA-Q-L-2007-02014	Sample No.	: WA-S-L-2007-12964
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Building C2 & C3 Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1232	Sampling Method	: BS 7592
Temperature °C	: 10.5°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C2 Building - ETS Room
Sampling Point	: Marina Bay 01 Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection= \leq 20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C2 BUILDING	SAMPLE POINT: ETS - ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.24
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1684
TDS, ppm	--	1094
Iron, ppm as Fe	0 - 2.0	0.08
Treatment Residuals		
Nitrite, ppm	> 800	920
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By

Murugaraaj
Service Engineer





Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13429



Request No.	: WA-Q-L-2007-02014	Sample No.	: WA-S-L-2007-12967
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Building C2 & C3 Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1232	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.4°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C3 Building - ETS Room
Sampling Point	: Marina Bay 02 Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



Microbiology Test Report

Report No. : WA-R-L-2007-13429

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D
Senior Microbiologist



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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13430

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02014	Sample No.	: WA-S-L-2007-12968
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Building C2 & C3 Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1232	Sampling Method	: BS 7592
Temperature °C	: 9.4°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C3 Building - ETS Room
Sampling Point	: Marina Bay 02 Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C3 BUILDING	SAMPLE POINT: ETS- ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 – 10.5	10.40
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1610
TDS, ppm	--	1046
Iron, ppm as Fe	0 – 2.0	0.12
Treatment Residuals		
Nitrite, ppm	> 800	810
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory <input type="checkbox"/>	No action recommended.
The Conductivity levels are satisfactory <input type="checkbox"/>	No action recommended.
Dissolved iron levels are within the control limits. <input type="checkbox"/>	No action recommended.
Corrosion Inhibitor levels are satisfactory <input type="checkbox"/>	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13411



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12949
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 7.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C4 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



Microbiology Test Report

Report No. : WA-R-L-2007-13411

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13417

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12955
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 7.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C4 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C4 BUILDING	SAMPLE POINT: CHILLER ROOM (LOW ZONE)

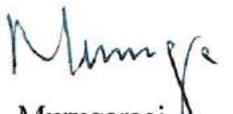
CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.39
Conductivity, $\mu\text{S}/\text{cm}$	Max 3500	3023
TDS, ppm	--	1964
Iron, ppm as Fe	0 - 2.0	0.35
Treatment Residuals		
Nitrite, ppm	> 800	1180
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13412



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12950
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 10.2°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C4 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Microbiology Test Report

Report No. : WA-R-L-2007-13412

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13418

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12956
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 10.2°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C4 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C4 BUILDING	SAMPLE POINT: CHILLER ROOM (HIGH ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.43
Conductivity, $\mu\text{S}/\text{cm}$	Max 3500	2892
TDS, ppm	--	1879
Iron, ppm as Fe	0 - 2.0	0.28
Treatment Residuals		
Nitrite, ppm	> 800	1060
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13414



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12952
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C5 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13414

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13420

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12958
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 9.1°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C5 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C5 BUILDING	SAMPLE POINT: CHILLER ROOM (LOW ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.29
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	3035
TDS, ppm	--	1972
Iron, ppm as Fe	0 - 2.0	0.36
Treatment Residuals		
Nitrite, ppm	> 800	1090
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13413



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12951
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 10.8°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C5 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13413

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13419

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12957
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 10.8°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C5 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C5 BUILDING	SAMPLE POINT: CHILLER ROOM (HIGH ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.21
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2041
TDS, ppm	--	1326
Iron, ppm as Fe	0 - 2.0	0.19
Treatment Residuals		
Nitrite, ppm	> 800	970
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13415



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12953
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 8.7°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C6 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13415

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13421

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12959
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 8.7°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C6 Building - ETS Room
Sampling Point	: Low Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C6 BUILDING	SAMPLE POINT: CHILLER ROOM (LOW ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.48
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	3029
TDS, ppm	--	1968
Iron, ppm as Fe	0 - 2.0	0.24
Treatment Residuals		
Nitrite, ppm	> 800	1090
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer





Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13416



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12954
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.5°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C6 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 4-8°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected= \leq 1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13416

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13422



Request No.	: WA-Q-L-2007-02013	Sample No.	: WA-S-L-2007-12960
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Hydra Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1233	Sampling Method	: BS 7592
Temperature °C	: 9.5°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: C6 Building - ETS Room
Sampling Point	: High Zone Basement - Chiller Point	Preservation	: 10°C
Sample Description	: Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C6 BUILDING	SAMPLE POINT: CHILLER ROOM (HIGH ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.18
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2687
TDS, ppm	--	1746
Iron, ppm as Fe	0 - 2.0	0.14
Treatment Residuals		
Nitrite, ppm	> 800	990
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Report No. WA-R-L-2007-13431

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No. : WA-Q-L-2007-02016

Sample No. : WA-S-L-2007-12969

Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Omega Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1234	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.4°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Omega Low Zone
Sampling Point	: Basement - ETS Room	Preservation	: 4-8°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13431

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13432



Request No.	: WA-Q-L-2007-02016	Sample No.	: WA-S-L-2007-12970
Sampling Date	: 05/07/2020	Report Date.	: 15/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Omega Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1234	Sampling Method	: BS 7592
Temperature °C	: 9.4°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Omega Low Zone
Sampling Point	: Basement - ETS Room	Preservation	: 10°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C10a - OMEGA BUILDING	SAMPLE POINT: CHILLER ROOM (LOW ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	9.52
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1823
TDS, ppm	--	1184
Iron, ppm as Fe	0 - 2.0	0.09
Treatment Residuals		
Nitrite, ppm	> 800	810
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By

Mufugara
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Report No. WA-R-L-2007-13433

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No. : WA-Q-L-2007-02016

Sample No. : WA-S-L-2007-12971

Sampling Date : 05/07/2020

Report Date. : 09/07/2020

Analysis Start Date. : 05/07/2020

Analysis End Date. : 08/07/2020

Sample Location. : Omega Tower Reem Island

Sampled By : Shoukth

Sample Identification : Not Applicable

Sample Submitted as : Water

Sample Certificate No : 1234

Sampling Method : APHA 9060 A&B

Temperature °C : 9.2°C

Site Observation : Clear

Sampling Container : Sterile Plastic Bottle

Source of Sample : Omega High Zone

Sampling Point : Basement - ETS Room

Preservation : 4-8°C

Sample Description : Chiller Water

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected= \leq 1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Microbiology Test Report

Report No. : WA-R-L-2007-13433

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13434



Request No.	: WA-Q-L-2007-02016	Sample No.	: WA-S-L-2007-12972
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Omega Tower Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1234	Sampling Method	: BS 7592
Temperature °C	: 9.2°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Omega High Zone
Sampling Point	: Basement - ETS Room	Preservation	: 10°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C10a - OMEGA BUILDING	SAMPLE POINT: CHILLER ROOM (HIGH ZONE)

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.38
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	3028
TDS, ppm	--	1968
Iron, ppm as Fe	0 - 2.0	0.23
Treatment Residuals		
Nitrite, ppm	> 800	980
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By

Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13439



Request No.	: WA-Q-L-2007-02018	Sample No.	: WA-S-L-2007-12975
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Sigma Tower - Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1235	Sampling Method	: APHA 9060 A&B
Temperature °C	: 9.9°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Sigma 1
Sampling Point	: Basement - ETS Room	Preservation	: 4-8°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Testing - NAL 034

Microbiology Test Report

Report No. : WA-R-L-2007-13439

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist

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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13440

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02018	Sample No.	: WA-S-L-2007-12976
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Sigma Tower - Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1235	Sampling Method	: BS 7592
Temperature °C	: 9.9°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Sigma 1
Sampling Point	: Basement - ETS Room	Preservation	: 10°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories



Dr. Suresh Murugan Ph.D

Senior Microbiologist

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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C 11- SIGMA BUILDING - 01	SAMPLE POINT: ETS ROOM

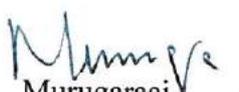
CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	9.98
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1942
TDS, ppm	--	1262
Iron, ppm as Fe	0 - 2.0	0.10
Treatment Residuals		
Nitrite, ppm	> 800	850
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW



Microbiology Test Report

Customer Details

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.

Report No. WA-R-L-2007-13441



Request No.	: WA-Q-L-2007-02018	Sample No.	: WA-S-L-2007-12977
Sampling Date	: 05/07/2020	Report Date.	: 09/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 08/07/2020
Sample Location.	: Sigma Tower - Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1235	Sampling Method	: APHA 9060 A&B
Temperature °C	: 8.9°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Sigma 2
Sampling Point	: Basement - ETS Room	Preservation	: 4-8°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Escherichia Coli	APHA 9222 B,H& I 23rd Ed. 2017	CFU/100ml	Not Detected	--
Faecal Coliforms	APHA 9222 D 23rd Ed. 2017	CFU/100ml	Not Detected	--
Heterotrophic plate count	APHA 9215 B 23rd Ed. 2017	CFU/ml	Not Detected	10000CFU/ml
Pseudomonas aeruginosa	CCFRA 2.5.2 5th Ed. 2007	CFU/250ml	Not Detected	--
Total Coliforms	APHA 9222 B 23rd Ed. 2017	CFU/100ml	Not Detected	--

Note : Not Detected=<1CFU

Limit based on DM.Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested results of the sample are found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; APHA-American Public Health Association; CCFRA-Campden Chorleywood Food Research Association.



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Microbiology Test Report

Report No. : WA-R-L-2007-13441

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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Legionella Test Report

Customer Details

Report No. WA-R-L-2007-13442

Crystalline Cleaning & Environmental Services

P.O.Box: 131463 Warehouse no: 84, M-45. Mussafah, Abu Dhabi, UAE.



Request No.	: WA-Q-L-2007-02018	Sample No.	: WA-S-L-2007-12978
Sampling Date	: 05/07/2020	Report Date.	: 16/07/2020
Analysis Start Date.	: 05/07/2020	Analysis End Date.	: 15/07/2020
Sample Location.	: Sigma Tower - Reem Island	Sampled By	: Shoukth
Sample Identification	: Not Applicable	Sample Submitted as	: Water
Sample Certificate No	: 1235	Sampling Method	: BS 7592
Temperature °C	: 8.9°C	Site Observation	: Clear
Sampling Container	: Sterile Plastic Bottle	Source of Sample	: Sigma 2
Sampling Point	: Basement - ETS Room	Preservation	: 10°C
Sample Description	: Chiller Water		

Parameters	Test Methods	Units	Results	Specification
Legionella	ISO 11731: 2017	CFU/L	Not Detected	100CFU/L

Note : Limit of Detection=<20CFU/L

Procedure: WSOP-MB-0051. Filtration, Washing, Heat Treatment, Acid Treatment followed by Plating on GVPC/BCYE Agar.

Limit based on DM. Rev2.Dated 6/2010 for guidelines for control of legionella in water system. Public Safety Department.

Remarks :The tested result of the sample is found to be satisfactory within the specified limits.

Analyst	Reviewed By	Method Variation
HS	SM	None

Key Words :CFU-Colony Forming Unit; BS-British Standard; ISO-International Organization for Standardization.

Signed for and on behalf of Wimpey Laboratories

Dr. Suresh Murugan Ph.D

Senior Microbiologist



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CRYSTALLINE ENVIRONMENTAL SERVICES

CONSULTING TEST REPORT

CUSTOMER: TAFAWUQ FACILITY MANAGEMENT	DATE: 05-07-2020
SITE LOCATION: C 10- SIGMA BUILDING - 02	SAMPLE POINT: ETS ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RESULTS
pH	9.0 - 10.5	10.24
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2580
TDS, ppm	--	1677
Iron, ppm as Fe	0 - 2.0	0.29
Treatment Residuals		
Nitrite, ppm	> 800	880
Dipslide	<10 ³	ND

***All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH level is satisfactory \Rightarrow	No action recommended.
The Conductivity levels are satisfactory \Rightarrow	No action recommended.
Dissolved iron levels are within the control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels are satisfactory \Rightarrow	No action recommended.

Reported By


Murugaraaj
Service Engineer



CLEANER WATER GREENER TOMORROW