

TEST REPORT

Report No:QMTL/R-101064/2020 Rev 01

| | | | |
|--|-------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO | | Sample ID | QMTL/S-101064 |
| | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 20 Apr 2020 |
| | | Date Reported | 07 June 2020 |
| Sample Description | Water Feature-01 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-15 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x500ml PB | Sampling Point | Water Feature |
| Sample Receipt Temp | 2.9°C | Sample On-site Temp | 28°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS (APHA 23 RD EDITION) | UNITS | SPECIFICATIONS | RESULTS |
|---------------------------------|---|-----------|----------------|---------|
| MICROBIOLOGICAL ANALYSIS | | | | |
| Total Bacterial Count | APHA 9215 B | CFU/ml | 500 | <1 |
| Total Coliforms | APHA 9222 B | CFU/100ml | Zero | Zero |
| Faecal coliform | APHA 9222 D | CFU/100ml | Zero | Zero |
| Pseudomonas aeruginosa | APHA 9213 E | CFU/100ml | Zero | Zero |
| Escherichia coli | APHA 9222 H & I | CFU/100ml | Zero | Zero |

| | |
|---------|--|
| Remarks | The sample meets DM Water Systems quality (2010) specifications for Water feature with respect to the above tests only. This report supersedes the report no QMTL/R-101064 reported on 27.04.2020 |
|---------|--|

| | |
|----------|--|
| Keywords | CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality; WI: Work Instruction, NP: Not Provided |
|----------|--|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

Reported By

ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT

TEST REPORT

Report No: QMTL/R-101078/2020 Rev 01

| | | | |
|---|-------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 | | Sample ID | QMTL/S-101078 |
| ATTN: Mr. JASMAN PINTO | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 28 Apr 2020 |
| | | Date Reported | 07 June 2020 |
| Sample Description | Water Feature-01 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-16 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x1L PB | Sampling Point | Water Feature |
| Sample Receipt Temp | 19°C | Sample On-site Temp | 28°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS | UNITS | LIMITS | RESULTS |
|--|---|-----------|--------|---------------|
| LEGIONELLA ANALYSIS | | | | |
| Legionella | ISO 11731:2017 E (Matrix A, Procedure 5) | CFU/litre | <1 | <1 |
| IDENTIFICATION | | | | |
| Legionella Species | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 1 | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 2-15 | ISO 11731:2017 E | - | - | Absent |

| | |
|---------|--|
| Remarks | The sample meets DM Water System quality (2010) specifications for Water Fountain with respect to the above tests only. This report supersedes the report no QMTL/R-101078 reported on 06.05.2020 |
|---------|--|

| | |
|----------|---|
| Keywords | CFU: Colony Forming Unit, ISO: International Organization for Standardization, DM: Dubai Municipality; NP: Not Provided, WI: Work Instruction, BCYE: Buffered Charcoal Yeast Extract Agar Culture Media :- BCYE Agar |
|----------|---|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

Reported By

ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT



CONSULTING SERVICE REPORT

| | | |
|---|--|-----------------------------------|
| CUSTOMER: SERCO FACILITY MANAGEMENT. | To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER | DATE: 18-04-2020 |
| SITE: ZAYED UNIVERSITY | COPY: SERCO | LOCATION: Water Feature 01 |

WATER FEATURE ANALYSIS

| PARAMETER | CONTROL LIMITS | Water Feature -01 | | | |
|--|----------------|-------------------|--|--|--|
| pH | 7.2 - 7.6 | 7.49 | | | |
| Conductivity, $\mu\text{s}/\text{cm}$ | | 654 | | | |
| TDS, ppm | Max 1500 | 425 | | | |
| 'P' Alkalinity, ppm as CaCO_3 | 80 - 120 | 86 | | | |
| Total Hardness, ppm as CaCO_3 | | | | | |
| Calcium Hardness, ppm as CaCO_3 | 100 - 500 | 145 | | | |
| Chloride, ppm as Cl^- | | | | | |
| Iron, ppm as Fe | | | | | |

Treatment Residuals

| | | | | | |
|------------------------------|------------------|------|--|--|--|
| Silica, ppm | | | | | |
| CaH Balance | | | | | |
| Dipslide | <10 ³ | ND | | | |
| Phosphate/Phosphonate | | | | | |
| Free Residual Chlorine as Cl | 1.0 - 2.0 | 1.14 | | | |
| Cyanuric Acid | 20 - 60 | 21 | | | |

All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).

| COMMENTS: | ACTION: |
|--|------------------------|
| The pH levels are satisfactory ⇨ | No Action Recommended. |
| Chlorine levels & Cyanuric acid levels are satisfactory ⇨ | No Action Recommended. |
| Calcium hardness satisfactory ⇨ | No Action Recommended. |

Kindly add chlorine and pool acid to maintain the desired control parameters in the water feature.

| INVENTORY LEVELS | | | DOSAGE SCHEDULE | |
|------------------|----------|----------|-----------------|----------------|
| Chemical | Quantity | Chemical | Present Dosage | Revised Dosage |
| Chlorine Tablets | | | -- | |
| Pool Acid | | | -- | |
| Crystal Care | | | -- | |

| | | | |
|-------------------|------------|------------|---------------------|
| Service Engineer: | Murugaraaj | Client: | Mr. Muhammed Afshar |
| Signature: | | Signature: | |



TEST REPORT

Report No: QMTL/R-101062/2020 Rev 01

| | | | |
|--|--------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO | | Sample ID | QMTL/S-101062 |
| | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 20 Apr 2020 |
| | | Date Reported | 07 June 2020 |
| Sample Description | Water Fountain-02 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-15 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x500ml PB | Sampling Point | Fountain |
| Sample Receipt Temp | 2.9°C | Sample On-site Temp | 29°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS (APHA 23 RD EDITION) | UNITS | SPECIFICATIONS | RESULTS |
|---------------------------------|---|-----------|----------------|---------|
| MICROBIOLOGICAL ANALYSIS | | | | |
| Total Bacterial Count | APHA 9215 B | CFU/ml | 500 | 20 |
| Total Coliforms | APHA 9222 B | CFU/100ml | - | Zero |
| Faecal coliform | APHA 9222 D | CFU/100ml | - | Zero |
| Pseudomonas aeruginosa | APHA 9213 E | CFU/100ml | - | Zero |
| Escherichia coli | APHA 9222 H & I | CFU/100ml | - | Zero |

| | |
|---------|---|
| Remarks | The sample meets DM Water Systems quality (2010) specifications for Fountain Water with respect to the above tests only. This report supersedes the report no QMTL/R-101062 reported on 27.04.2020 |
|---------|---|

| | |
|----------|--|
| Keywords | CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality; WI: Work Instruction, NP: Not Provided |
|----------|--|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

Reported By

ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT

TEST REPORT

Report No: QMTL/R-101076/2020 Rev 01

| | | | |
|--|--------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO | | Sample ID | QMTL/S-101076 |
| | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 28 Apr 2020 |
| | | Date Reported | 07 June 2020 |
| Sample Description | Water Fountain-02 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-16 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x1L PB | Sampling Point | Water Fountain |
| Sample Receipt Temp | 19°C | Sample On-site Temp | 29°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS | UNITS | LIMITS | RESULTS |
|--|---|-----------|--------|---------------|
| LEGIONELLA ANALYSIS | | | | |
| Legionella | ISO 11731:2017 E (Matrix A, Procedure 5) | CFU/litre | <1 | <1 |
| IDENTIFICATION | | | | |
| Legionella Species | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 1 | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 2-15 | ISO 11731:2017 E | - | - | Absent |

| | |
|---------|---|
| Remarks | The sample meets DM Water System quality (2010) specifications for Water Fountain with respect to the above tests only This report supersedes the report no QMTL/R-101076 reported on 06.05.2020 |
|---------|---|

| | |
|----------|--|
| Keywords | CFU: Colony Forming Unit, ISO: International Organization for Standardization, DM: Dubai Municipality; NP: Not Provided, WI: Work Instruction; BCYE: Buffered Charcoal Yeast Extract Agar Culture Media :- BCYE Agar. |
|----------|--|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

Reported By

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LABORATORY MANAGER

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END OF REPORT



CONSULTING SERVICE REPORT

| | | |
|---|--|------------------------------------|
| CUSTOMER: SERCO FACILITY MANAGEMENT. | To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER | DATE: 18-04-2020 |
| SITE: ZAYED UNIVERSITY | COPY: SERCO | LOCATION: Water Fountain 02 |

WATER FEATURE ANALYSIS

| PARAMETER | CONTROL LIMITS | Water Fountain | | | |
|--|----------------|----------------|--|--|--|
| pH | 7.2 - 7.6 | 7.55 | | | |
| Conductivity, $\mu\text{s/cm}$ | | 619 | | | |
| TDS, ppm | Max 1500 | 402 | | | |
| 'P' Alkalinity, ppm as CaCO_3 | 80 - 120 | 85 | | | |
| Total Hardness, ppm as CaCO_3 | | | | | |
| Calcium Hardness, ppm as CaCO_3 | 100 - 500 | 124 | | | |
| Chloride, ppm as Cl | | | | | |
| Iron, ppm as Fe | | | | | |

| Treatment Residuals | | | | | |
|------------------------------|------------------|------|--|--|--|
| Silica, ppm | | | | | |
| CaH Balance | | | | | |
| Dipslide | <10 ³ | ND | | | |
| Phosphate/Phosphonate | | | | | |
| Free Residual Chlorine as Cl | 1.0 - 2.0 | 1.10 | | | |
| Cyanuric Acid | 20 - 60 | 23 | | | |

All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).

| COMMENTS: | ACTION: |
|--|------------------------|
| The pH levels are satisfactory <input type="checkbox"/> | No Action Recommended. |
| Chlorine levels & Cyanuric acid levels are satisfactory <input type="checkbox"/> | No Action Recommended. |
| Calcium hardness satisfactory <input type="checkbox"/> | No Action Recommended. |

Kindly add chlorine and pool acid to maintain the desired control parameters in the water feature.

| INVENTORY LEVELS | | | DOSAGE SCHEDULE | |
|------------------|----------|----------|-----------------|----------------|
| Chemical | Quantity | Chemical | Present Dosage | Revised Dosage |
| Chlorine Tablets | | | -- | |
| Pool Acid | | | -- | |
| Crystal Care | | | -- | |

| | | | |
|-------------------|------------|------------|---------------------|
| Service Engineer: | Murugaraaj | Client: | Mr. Muhammed Afshar |
| Signature: | | Signature: | |



TEST REPORT

Report No:QMTL/R-101063/2020 Rev 01

| | | | |
|---|-------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 | | Sample ID | QMTL/S-101063 |
| | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 20 Apr 2020 |
| ATTN: Mr. JASMAN PINTO | | Date Reported | 07 June 2020 |
| Sample Description | Water Feature-03 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-15 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x500ml PB | Sampling Point | Water Feature |
| Sample Receipt Temp | 2.9°C | Sample On-site Temp | 29°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS (APHA 23 RD EDITION) | UNITS | SPECIFICATIONS | RESULTS |
|---------------------------------|---|-----------|----------------|---------|
| MICROBIOLOGICAL ANALYSIS | | | | |
| Total Bacterial Count | APHA 9215 B | CFU/ml | 500 | 3 |
| Total Coliforms | APHA 9222 B | CFU/100ml | - | Zero |
| Faecal coliform | APHA 9222 D | CFU/100ml | - | Zero |
| Pseudomonas aeruginosa | APHA 9213 E | CFU/100ml | - | Zero |
| Escherichia coli | APHA 9222 H & I | CFU/100ml | - | Zero |

| | |
|---------|--|
| Remarks | The sample meets DM Water Systems quality (2010) specifications for Water feature with respect to the above tests only. This report supersedes the report no QMTL/R-101063 reported on 27.04.2020 |
|---------|--|

| | |
|----------|--|
| Keywords | CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality; WI: Work Instruction, NP: Not Provided |
|----------|--|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

Reported By

ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT

TEST REPORT

Report No: QMTL/R-101077/2020 Rev 01

| | | | |
|--|-------------------------|---------------------|-----------------------------|
| CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO | | Sample ID | QMTL/S-101077 |
| | | Date Received | 18 Apr 2020 |
| | | Date(s) Tested | 18 Apr 2020- 28 Apr 2020 |
| | | Date Reported | 07 June 2020 |
| Sample Description | Water Feature-03 | | |
| Sample Type | Water | Sampling Method | QMTL-WI-16 |
| Client Name/Project | NP | Sampled By | QMTL Representative |
| Location | ZAYED UNIVERSITY, AUH | Sampling Date/Time | 18.04.2020/ 11.30 AM |
| Sample Container | 1x1L PB | Sampling Point | Water Feature |
| Sample Receipt Temp | 19°C | Sample On-site Temp | 29°C |
| Sample Appearance | Clear | On-site Treatment | NP |
| Reference | NP | | |

TEST RESULTS

| PARAMETERS | TEST METHODS | UNITS | LIMITS | RESULTS |
|--|---|-----------|--------|---------------|
| LEGIONELLA ANALYSIS | | | | |
| Legionella | ISO 11731:2017 E (Matrix A, Procedure 5) | CFU/litre | <1 | <1 |
| IDENTIFICATION | | | | |
| Legionella Species | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 1 | ISO 11731:2017 E | - | - | Absent |
| Legionella pneumophila sero group 2-15 | ISO 11731:2017 E | - | - | Absent |

| | |
|---------|--|
| Remarks | The sample meets DM Water System quality (2010) specifications for Water Fountain with respect to the above tests only. This report supersedes the report no QMTL/R-101077 reported on 06.05.2020 |
|---------|--|

| | |
|----------|---|
| Keywords | CFU: Colony Forming Unit, ISO: International Organization for Standardization, DM: Dubai Municipality; NP: Not Provided, WI: Work Instruction ; BCYE: Buffered Charcoal Yeast Extract Agar Culture Media :- BCYE Agar. |
|----------|---|

| | |
|---|---------|
| Test Method Deviation | None |
| Test performed by Emp# | 55 & 74 |
| Report prepared by Emp# | 72 |
| The above test results are only applicable to the sample(s) referred above. | |

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END OF REPORT



CONSULTING SERVICE REPORT

| | | |
|---|--|-----------------------------------|
| CUSTOMER: SERCO FACILITY MANAGEMENT. | To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER | DATE: 18-04-2020 |
| SITE: ZAYED UNIVERSITY | COPY: SERCO | LOCATION: Water Feature 03 |

WATER FEATURE ANALYSIS

| PARAMETER | CONTROL LIMITS | Water Fountain | | | |
|--|----------------|----------------|--|--|--|
| pH | 7.2 - 7.6 | 7.54 | | | |
| Conductivity, $\mu\text{s}/\text{cm}$ | | 597 | | | |
| TDS, ppm | Max 1500 | 380 | | | |
| 'P' Alkalinity, ppm as CaCO_3 | 80 - 120 | 86 | | | |
| Total Hardness, ppm as CaCO_3 | | | | | |
| Calcium Hardness, ppm as CaCO_3 | 100 - 500 | 136 | | | |
| Chloride, ppm as Cl^- | | | | | |
| Iron, ppm as Fe | | | | | |

Treatment Residuals

| | | | | | |
|------------------------------|------------------|------|--|--|--|
| Silica, ppm | | | | | |
| CaH Balance | | | | | |
| Dipslide | <10 ³ | ND | | | |
| Phosphate/Phosphonate | | | | | |
| Free Residual Chlorine as Cl | 1.0 - 2.0 | 1.13 | | | |
| Cyanuric Acid | 20 - 60 | 25 | | | |

All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).

COMMENTS:

ACTION:

| | | |
|---|---|------------------------|
| The pH levels are satisfactory | ⇒ | No Action Recommended. |
| Chlorine levels & Cyanuric acid levels are satisfactory | ⇒ | No Action Recommended. |
| Calcium hardness satisfactory | ⇒ | No Action Recommended. |

Kindly add chlorine and pool acid to maintain the desired control parameters in the water feature.

INVENTORY LEVELS

DOSAGE SCHEDULE

| Chemical | Quantity | Chemical | Present Dosage | Revised Dosage |
|------------------|----------|----------|----------------|----------------|
| Chlorine Tablets | | | -- | |
| Pool Acid | | | -- | |
| Crystal Care | | | -- | |

| | | | |
|--------------------------|------------|-------------------|---------------------|
| Service Engineer: | Murugaraaj | Client: | Mr. Muhammed Afshar |
| Signature: | | Signature: | |

