

TEST REPORT

REPORT NO:-QMTL/R-82943

CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E		
Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S-82943
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : ETS Chilled Water Sample Onsite Temp: 8°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 07-09.12.2019
	Sample Container: 1X 500 ml PB	Date Reported: 12.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/08.30 AM
On-Site Treatment: NA	Tested by Emp#: 55&74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	230
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 Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 75

Test Method deviation : None

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-82944

CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S-82944
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : Redundant Chiller Sample Onsite Temp: 18°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 07-09.12.2019
	Sample Container: 1X 500 ml PB	Date Reported: 12.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/08.40 AM
On-Site Treatment: NA	Tested by Emp#: 55&74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	<1
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 Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 75

Test Method deviation : None

The above test results are only applicable to the sample(s) referred above

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TEST REPORT

REPORT NO:-QMTL/R-82954

CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S-82954
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : MTER Chilled Water Sample Onsite Temp: 12°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 07-09.12.2019
	Sample Container: 1X 500 ml PB	Date Reported: 12.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/09.54 AM
On-Site Treatment: NA	Tested by Emp#: 55&74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	210
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 Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 75

Test Method deviation : None

The above test results are only applicable to the sample(s) referred above

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TEST REPORT

REPORT NO:-QMTL/R-82966

CLIENT: CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S-82966
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : RTER Chilled Water Sample Onsite Temp: 12.4°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 07-09.12.2019
	Sample Container: 1X 500 ml PB	Date Reported: 12.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/01.07 PM
On-Site Treatment: NA	Tested by Emp#: 55&74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	<1
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 Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 75

Test Method deviation : None

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TEST REPORT

REPORT NO:-QMTL/R-82972

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E		
Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: BS 7592	Sample ID: QMTL/S-82972
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : ETS Chilled Water Sample Onsite Temp: 8°C Sample Receipt Temp: 16°C	Source: Valve	Date(s) Tested: 07-17.12.2019
	Sample Container: 1X 1L PB	Date Reported: 17.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/08.30 AM
On-Site Treatment: NA	Tested by Emp#: 55 & 74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	LIMITS	RESULTS
LEGIONELLA ANALYSIS				
Legionella	CCFRA 3.9.1 (5 th Edition)	cfu/litre	1000	Not Detected
IDENTIFICATION				
Legionella Species	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 1	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 2-15	CCFRA 3.9.1 (5 th Edition)	-	-	Absent

REMARKS:The sample meets DM Water Systems Quality (2010) specifications for Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, CCFRA: Campden & Chorleywood Food Research Association, DM: Dubai Municipality, BS: British Standards, NA: Not Available

Report prepared by Emp#: 75

Test Method deviation : None

The above test results are only applicable to the sample(s) referred above

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TEST REPORT

REPORT NO:-QMTL/R-82973

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E		
Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: BS 7592	Sample ID: QMTL/S-82973
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : Redundant Chiller Sample Onsite Temp: 18°C Sample Receipt Temp: 16°C	Source: Valve	Date(s) Tested: 07-17.12.2019
	Sample Container: 1X 1L PB	Date Reported: 17.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/08.40 AM
On-Site Treatment: NA	Tested by Emp#: 55 & 74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	LIMITS	RESULTS
LEGIONELLA ANALYSIS				
Legionella	CCFRA 3.9.1 (5 th Edition)	cfu/litre	1000	Not Detected
IDENTIFICATION				
Legionella Species	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 1	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 2-15	CCFRA 3.9.1 (5 th Edition)	-	-	Absent

REMARKS:The sample meets DM Water Systems Quality (2010) specifications for Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, CCFRA: Campden & Chorleywood Food Research Association, DM: Dubai Municipality, BS: British Standards, NA: Not Available

Report prepared by Emp#: 75

Test Method deviation : None

The above test results are only applicable to the sample(s) referred above

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TEST REPORT

REPORT NO:-QMTL/R-82983

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: BS 7592	Sample ID: QMTL/S-82983
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : MTER Chilled Water Sample Onsite Temp: 12°C Sample Receipt Temp: 16°C	Source: Valve	Date(s) Tested: 07-17.12.2019
	Sample Container: 1X 1L PB	Date Reported: 17.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/09.54 AM
On-Site Treatment: NA	Tested by Emp#: 55 & 74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	LIMITS	RESULTS
LEGIONELLA ANALYSIS				
Legionella	CCFRA 3.9.1 (5 th Edition)	cfu/litre	1000	Not Detected
IDENTIFICATION				
Legionella Species	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 1	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 2-15	CCFRA 3.9.1 (5 th Edition)	-	-	Absent

REMARKS:The sample meets DM Water Systems Quality (2010) specifications for Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, CCFRA: Campden & Chorleywood Food Research Association, DM: Dubai Municipality, BS: British Standards, NA: Not Available

Report prepared by Emp#: 75

Test Method deviation : None

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END OF REPORT

TEST REPORT

REPORT NO:-QMTL/R-82995

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN:MR. JASMAN PINTO		
Product: Water	Sampling Method: BS 7592	Sample ID: QMTL/S-82995
Reference: NYUAD	Sampled By: QMTL Representative	Date Received: 07.12.2019
Sample Description : RTER Chilled Water Sample Onsite Temp: 12.4°C Sample Receipt Temp: 16°C	Source: Valve	Date(s) Tested: 07-17.12.2019
	Sample Container: 1X 1L PB	Date Reported: 17.12.2019
	Sample Appearance: Clear	Date of Sampling/Time: 07.12.2019/01.07 PM
On-Site Treatment: NA	Tested by Emp#: 55 & 74	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	LIMITS	RESULTS
LEGIONELLA ANALYSIS				
Legionella	CCFRA 3.9.1 (5 th Edition)	cfu/litre	1000	Not Detected
IDENTIFICATION				
Legionella Species	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 1	CCFRA 3.9.1 (5 th Edition)	-	-	Absent
Legionella pneumophila sero group 2-15	CCFRA 3.9.1 (5 th Edition)	-	-	Absent

REMARKS:The sample meets DM Water Systems Quality (2010) specifications for Cooling Water System with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, CCFRA: Campden & Chorleywood Food Research Association, DM: Dubai Municipality, BS: British Standards, NA: Not Available

Report prepared by Emp#: 75

Test Method deviation : None

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 - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 07-12-2019
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 10-11-2019

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	ETS			
pH	9.0 - 10.5	9.57			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2140			
TDS, ppm	--	1391			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.14			

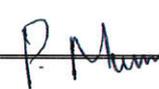
Treatment Residuals

Nitrite, ppm	> 800	880			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauric Acid					

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

COMMENTS:	ACTION:
The pH and Conductivity/TDS are found satisfactory. \Rightarrow	No action recommended.
Dissolved iron levels are found within control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels found satisfactory. \Rightarrow	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		



CONSULTING SERVICE REPORT

CUSTOMER: SERCO – NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 07-12-2019
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 10-11-2019

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	MTER			
pH	9.0 – 10.5	9.93			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1795			
TDS, ppm	--	1166			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 – 2.0	0.12			

Treatment Residuals

Nitrite, ppm	> 800	1020			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauroic Acid					

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

COMMENTS:	ACTION:
The pH and Conductivity/TDS are found satisfactory. \Rightarrow	No action recommended.
Dissolved iron levels are within control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels found satisfactory. \Rightarrow	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition. Corrosion inhibitor sensor are ok.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:	<i>P. Munnuraj</i>	Signature:		



CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 07-12-2019
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 10-11-2019

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Redundant			
pH	9.0 - 10.5	9.77			
Conductivity, $\mu\text{S}/\text{cm}$	Max 3500	3150			
TDS, ppm	--	2047			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.05			

Treatment Residuals					
Nitrite, ppm	\gt 800	1360			
CaH Balance					
Dipslide	$<10^3$	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauroic Acid					

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

COMMENTS:	ACTION:
The pH and Conductivity/TDS are found satisfactory. \Rightarrow	No action recommended.
Dissolved iron levels are satisfactory. \Rightarrow	No action recommended.
Corrosion Inhibitor levels satisfactory \Rightarrow	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		





CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI

**To: Mr. Ratheesh Muttath
Operations Engineer**

DATE: 07-12-2019

CUSTOMER ID: 3003

Copy: SERCO - NYUAD

LAST VISIT: 10-11-2019

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RTER			
pH	9.0 - 10.5	9.21			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2230			
TDS, ppm	--	1453			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.09			

Treatment Residuals

Nitrite, ppm	> 800	1260			
CaH Balance					
Dipslide	$<10^3$	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynaunic Acid					

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

COMMENTS:

ACTION:

The pH and Conductivity/TDS are found satisfactory.	⇒	No action recommended.
Dissolved iron levels are satisfactory.	⇒	No action recommended.
Corrosion Inhibitor levels found satisfactory	⇒	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	

Service Engineer: Murugaraaj **Client: Mr. Ratheesh Muttath**

Signature:

P. Mummy

