

TEST REPORT

Report No: QMTL/R-92598/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO	Sample ID	QMTL/S-92598	
	Date Received	08 Feb 2020	
	Date(s) Tested	08 Feb 2020 - 10 Feb 2020	
	Date Reported	24 Feb 2020	
Sample Description	ETS Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/8:30AM
Sample Container	1x500mL PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	7°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NYUAD		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	160
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.			

Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA : Not Applicable ; NP: Not Provided
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Test method deviation	None
Test performed by Emp#	74 & 55
Report prepared by Emp#	22
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-92599/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO	Sample ID	QMTL/S-92599
	Date Received	08 Feb 2020
	Date(s) Tested	08 Feb 2020 - 10 Feb 2020
	Date Reported	24 Feb 2020
Sample Description	Redundant Chilled Water	
Sample Type	Water	Sampling Method QMTL-WI-15
Client Name/Project	NP	Sampled By QMTL Representative
Location	AUH	Sampling Date/Time 08.02.2020/8:30AM
Sample Container	1x500mL PB	Sampling Point Valve
Sample Receipt Temp	4°C	Sample Onsite Temp 18°C
Sample Appearance	Clear	On-site Treatment NA
Reference	NYUAD	

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	210
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero
Remarks	The sample meets RSB Water Quality Regulations (4th Edition) January 2014 requirements for potable water with respect to the above tests only.			

Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA : Not Applicable ; NP: Not Provided
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Test method deviation	None
Test performed by Emp#	74 & 55
Report prepared by Emp#	22
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

TEST REPORT

Report No: QMTL/R-92604/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-92604
ATTN : MR. JASMAN PINTO		Date Received	08 Feb 2020
		Date(s) Tested	08 Feb 2020 - 10 Feb 2020
		Date Reported	24 Feb 2020
Sample Description	MTER Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/9:45AM
Sample Container	1x500mL PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	16.3°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NYUAD		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	15
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.			

Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA : Not Applicable ; NP: Not Provided
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Test method deviation	None
Test performed by Emp#	74 & 55
Report prepared by Emp#	22

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

TEST REPORT

Report No: QMTL/R-92616/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO	Sample ID	QMTL/S-92616	
	Date Received	08 Feb 2020	
	Date(s) Tested	08 Feb 2020 - 10 Feb 2020	
	Date Reported	24 Feb 2020	
Sample Description	RTER Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/12:50PM
Sample Container	1x500mL PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	16°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NYUAD		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.			

Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA : Not Applicable ; NP: Not Provided
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Test method deviation	None
Test performed by Emp#	74 & 55
Report prepared by Emp#	22

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

Reported By



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END OF REPORT

CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI
**To: Mr. Ratheesh Muttath
Operations Engineer**
DATE: 08-02-2020
CUSTOMER ID: 3003
Copy: SERCO - NYUAD
LAST VISIT: 04-01-2020

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	ETS			
pH	9.0 - 10.5	9.87			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1754			
TDS, ppm	--	1142			
'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	0.13			

Treatment Residuals

Nitrite, ppm	\gt 800	820			
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: 08-02-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 04-01-2020

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	MTER			
pH	9.0 - 10.5	9.75			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1980			
TDS, ppm	--	1287			
'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	0.24			

Treatment Residuals					
Nitrite, ppm	\gt 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 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:		Signature:		





CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 08-02-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 04-01-2020

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Redundant			
pH	9.0 - 10.5	9.51			
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	0.10			

Treatment Residuals					
Nitrite, ppm	\gt 800	860			
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 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:	<i>PM</i>	Signature:		





CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI

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

DATE: 08-02-2020

CUSTOMER ID: 3003

Copy: SERCO - NYUAD

LAST VISIT: 04-01-2020

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	RTER			
pH	9.0 - 10.5	8.87			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2860			
TDS, ppm	--	1859			
'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	0.08			

Treatment Residuals

Nitrite, ppm	\gt 800	1420			
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 satisfactory.	\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:	

