

TEST REPORT

Report No: QMTL/R-92618/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-92618
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	Main Swimming Pool		
Sample Type	Pool Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/1:10PM
Sample Container	1x500mL PB	Sampling Point	Pool
Sample Receipt Temp	4°C	Sample Onsite Temp	25.5°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 ml	Zero	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	Zero	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	1000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	Zero	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Pool 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



ANILA GEORGE

LABORATORY MANAGER



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END OF REPORT

TEST REPORT

Report No: QMTL/R-92621/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-92621
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	Faculty Pool		
Sample Type	Pool Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/2:00PM
Sample Container	1x500mL PB	Sampling Point	Pool
Sample Receipt Temp	4°C	Sample Onsite Temp	26°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 ml	Zero	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	Zero	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	1000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	Zero	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Pool 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.	

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END OF REPORT

TEST REPORT

Report No: QMTL/R-92622/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-92622	
	Date Received	08 Feb 2020	
	Date(s) Tested	08 Feb 2020 - 10 Feb 2020	
	Date Reported	24 Feb 2020	
ATTN : MR. JASMAN PINTO			
Sample Description	Kids Pool		
Sample Type	Pool Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/2:10PM
Sample Container	1x500mL PB	Sampling Point	Pool
Sample Receipt Temp	4°C	Sample Onsite Temp	27°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 ml	Zero	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	Zero	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	1000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	Zero	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Pool 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.	

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END OF REPORT

TEST REPORT

Report No: QMTL/R-92619/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-92619	
	Date Received	08 Feb 2020	
	Date(s) Tested	08 Feb 2020 - 10 Feb 2020	
	Date Reported	24 Feb 2020	
ATTN : MR. JASMAN PINTO			
Sample Description	Jacuzzi Cold Pool		
Sample Type	Pool Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/1:15PM
Sample Container	1x500mL PB	Sampling Point	Pool
Sample Receipt Temp	4°C	Sample Onsite Temp	10.8°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 ml	Zero	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	Zero	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	1000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	Zero	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Pool 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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END OF REPORT

TEST REPORT

Report No: QMTL/R-92620/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-92620
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	Jacuzzi Hot Pool		
Sample Type	Pool Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	AUH	Sampling Date/Time	08.02.2020/1:45PM
Sample Container	1x500mL PB	Sampling Point	Pool
Sample Receipt Temp	4°C	Sample Onsite Temp	40°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 ml	Zero	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	Zero	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	1000	<1
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	Zero	Zero
Remarks	The sample meets DM Water Systems quality (2010) specifications for Pool 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.	

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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

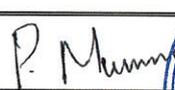
SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	MAIN POOL			
pH	7.2 - 7.6	7.49			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	894			
TDS, ppm	Max 1000	581			
'P' Alkalinity, ppm as CaCO_3	80 - 120	94			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	168			
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	1.46			
Cyanuric Acid	20 - 60	---			

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

COMMENTS:	ACTION:
The pH found satisfactory. ⇨	No Action Recommended
Chlorine levels are found satisfactory. ⇨	No Action Recommended
Calcium hardness and Alkalinity found satisfactory ⇨	No Action Recommended

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
HTH Chlorine			--	
Pool Acid			--	
Calcium Chloride				
Soda Ash				
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

SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	FACULTY POOL			
pH	7.2 - 7.6	7.47			
Conductivity, $\mu\text{S}/\text{cm}$		1654			
TDS, ppm		1075			
'P' Alkalinity, ppm as CaCO_3	80 - 120	92			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	268			
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe					

Treatment Residuals					
Silica, ppm					
CaH Balance					
Dipslide	<10 ³	ND			
Salinity in mg/l	--				
Free Residual Chlorine as Cl	1.0 - 2.0	1.15			
Cyanuric Acid	20 - 60	31			

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 are found satisfactory. ⇒	No Action Recommended.
Calcium Hardness levels are satisfactory. ⇒	No Action Recommended.

Kindly add salt granules and pool acid to maintain the desired control parameters in the pool. Sand filter multiport valve is broken and needs to be replaced. Install a standby pump (recirculation) for the faculty pool. The sand media in the filter to be replaced every 2-3 years. Also install an AC inside the plant room. Upgrade to a chlorine pH pool controller to maintain the chemical levels in the pool.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Salt Granules			--	
Pool Acid			--	
Crystal Care			--	
Crystal Clear				
Calcium Chloride				
Soda Ash				

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

SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	KIDS POOL			
pH	7.2 - 7.6	7.50			
Conductivity, $\mu\text{s}/\text{cm}$		1688			
TDS, ppm		1097			
'P' Alkalinity, ppm as CaCO_3	80 - 120	89			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	256			
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe					

Treatment Residuals

Silica, ppm					
CaH Balance					
Dipslide	<10 ³	ND			
Salinity in mg/l	--				
Free Residual Chlorine as Cl	1.0 - 2.0	1.21			
Cyanuric Acid	20 - 60	30			

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 are found satisfactory. ⇒	No Action Recommended.
Calcium Hardness levels are satisfactory. ⇒	No Action Recommended.

Kindly add salt granules and pool acid to maintain the desired control parameters in the pool. The salt chlorinator is faulty and must be replaced. Sand filter multiport valve is broken and needs to be replaced. Install a standby pump (recirculation) for the faculty pool. The sand media in the filter to be replaced every 2-3 years. Also install an AC inside the plant room.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Salt Granules			--	
Pool Acid			--	
Crystal Care			--	
Crystal Clear				
Calcium Chloride				
Soda Ash				
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

HYDRO POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	HOT HYDRO POOL			
pH	7.2 - 7.6	7.52			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	605			
TDS, ppm	Max 1000	393			
'P' Alkalinity, ppm as CaCO_3	80 - 120	41			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3					
Chloride, ppm as Cl^-					
Iron, ppm as Fe					

Treatment Residuals

Silica, ppm					
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine	1.0 - 2.0	<0.05			
Cyanuric Acid	20 - 60	--			

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

COMMENTS:	ACTION:
The pH is found are satisfactory \Rightarrow	No Action Recommended.
Chlorine level is low \Rightarrow	Add Chlorine tablets to maintain the chlorine.

Kindly add chorine and pool acid to maintain the desired control parameters in the Hydro Pool. There is no automatic dosing system. Kindly install an automatic dosing system to maintain the desired chemical levels in the system.

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal Brome			--	
Pool Acid			--	
Crystal Care			--	
Crystal Clear				
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:	PM	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

HYDRO POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	COLD HYDRO POOL			
pH	7.2 – 7.6	7.53			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	257			
TDS, ppm	Max 1000	167			
'P' Alkalinity, ppm as CaCO_3	80 - 120	24			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3					
Chloride, ppm as Cl^-					
Iron, ppm as Fe					

Treatment Residuals

Silica, ppm					
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine	1.0 – 2.0	0.13			
Cyanuric Acid	20 - 60	--			

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

COMMENTS:	ACTION:
The pH is found are satisfactory ⇒	No Action Recommended.
Chlorine levels are low ⇒	Add Chlorine Tablets to maintain the chlorine.

Kindly add chorine and pool acid to maintain the desired control parameters in the Hydro Pool. There is no automatic dosing system. Kindly install an automatic dosing system to maintain the desired chemical levels in the system.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal Brome			--	
Pool Acid			--	
Crystal Care			--	
Crystal Clear				
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		

