

TEST REPORT

Report No: QMTL/R-100492/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-100492
		Date Received	12 Apr 2020
		Date(s) Tested	12 Apr 2020 - 14 Apr 2020
ATTN : MR. JASMAN PINTO		Date Reported	18 Apr 2020
Sample Description	Main Swimming Pool		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	12.04.2020/ 2:30 PM
Sample Container	1x500ml PB	Sampling Point	Pool
Sample Receipt Temp	4.5°C	Sample Onsite Temp	30°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

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, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Test method deviation	None
-----------------------	------

Test performed by Emp#	14 & 55
------------------------	---------

Report prepared by Emp#	72
-------------------------	----

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

Reported By



ANILA GEORGE
LABORATORY MANAGER



The test report shall not be reproduced(except in full) without the written approval of QMTL. When analysis is witnessed by us or carried out by sub contract labs, our responsibility is solely to ensure that the analysis is conducted to standard test methods in accordance with Industry accepted practice.

END OF REPORT

TEST REPORT

Report No: QMTL/R-100499/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO		Sample ID	QMTL/S-100499
		Date Received	12 Apr 2020
		Date(s) Tested	12 Apr 2020 - 14 Apr 2020
		Date Reported	18 Apr 2020
Sample Description	Faculty Pool		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	12.04.2020/ 3:18 PM
Sample Container	1x500ml PB	Sampling Point	Pool
Sample Receipt Temp	4.5°C	Sample Onsite Temp	28.5°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

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	150
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, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Test method deviation	None
-----------------------	------

Test performed by Emp#	14 & 55
------------------------	---------

Report prepared by Emp#	72
-------------------------	----

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

Reported By



ANILA GEORGE
LABORATORY MANAGER



The test report shall not be reproduced (except in full) without the written approval of QMTL. When analysis is witnessed by us or carried out by sub contract labs, our responsibility is solely to ensure that the analysis is conducted to standard test methods in accordance with Industry accepted practice.

END OF REPORT

TEST REPORT

Report No: QMTL/R-100498/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-100498
ATTN : MR. JASMAN PINTO		Date Received	12 Apr 2020
		Date(s) Tested	12 Apr 2020 - 14 Apr 2020
		Date Reported	18 Apr 2020
Sample Description	Kids Pool		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	12.04.2020/ 3:15 PM
Sample Container	1x500ml PB	Sampling Point	Pool
Sample Receipt Temp	4.5°C	Sample Onsite Temp	29°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

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, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Test method deviation	None
-----------------------	------

Test performed by Emp#	14 & 55
------------------------	---------

Report prepared by Emp#	72
-------------------------	----

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

Reported By



ANILA GEORGE
LABORATORY MANAGER



The test report shall not be reproduced (except in full) without the written approval of QMTL. When analysis is witnessed by us or carried out by sub contract labs, our responsibility is solely to ensure that the analysis is conducted to standard test methods in accordance with Industry accepted practice.

END OF REPORT

TEST REPORT

Report No: QMTL/R-100497/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-100497
		Date Received	12 Apr 2020
		Date(s) Tested	12 Apr 2020 - 14 Apr 2020
ATTN : MR. JASMAN PINTO		Date Reported	18 Apr 2020
Sample Description	Hydro Pool- Cold		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	12.04.2020/ 3:10 PM
Sample Container	1x500ml PB	Sampling Point	Pool
Sample Receipt Temp	4.5°C	Sample Onsite Temp	7.5°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

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	5
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, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Test method deviation	None
-----------------------	------

Test performed by Emp#	14 & 55
------------------------	---------

Report prepared by Emp#	72
-------------------------	----

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

Reported By



ANILA GEORGE
LABORATORY MANAGER



The test report shall not be reproduced(except in full) without the written approval of QMTL. When analysis is witnessed by us or carried out by sub contract labs, our responsibility is solely to ensure that the analysis is conducted to standard test methods in accordance with Industry accepted practice.

END OF REPORT

TEST REPORT

Report No: QMTL/R-100496/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-100496
ATTN : MR. JASMAN PINTO		Date Received	12 Apr 2020
		Date(s) Tested	12 Apr 2020 - 14 Apr 2020
		Date Reported	18 Apr 2020
Sample Description	Hydro Pool- Hot		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	12.04.2020/ 3:05 PM
Sample Container	1x500ml PB	Sampling Point	Pool
Sample Receipt Temp	4.5°C	Sample Onsite Temp	38°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

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	110
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, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------

Test method deviation	None
-----------------------	------

Test performed by Emp#	14 & 55
------------------------	---------

Report prepared by Emp#	72
-------------------------	----

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

Reported By



ANILA GEORGE
LABORATORY MANAGER



The test report shall not be reproduced (except in full) without the written approval of QMTL. When analysis is witnessed by us or carried out by sub contract labs, our responsibility is solely to ensure that the analysis is conducted to standard test methods in accordance with Industry accepted practice.

END OF REPORT



CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 12-04-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-03-2020

SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	MAIN POOL			
pH	7.2 - 7.6	7.54			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	687			
TDS, ppm	Max 1000	446			
'P' Alkalinity, ppm as CaCO_3	80 - 120	91			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	143			
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	1.19			
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: 12-04-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-03-2020

SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	FACULTY POOL			
pH	7.2 – 7.6	7.58			
Conductivity, $\mu\text{s}/\text{cm}$		867			
TDS, ppm		563			
'P' Alkalinity, ppm as CaCO_3	80 - 120	96			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	146			
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	1.24			
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. ⇒	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: 12-04-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-03-2020

SWIMMING POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	KIDS POOL			
pH	7.2 - 7.6	7.57			
Conductivity, $\mu\text{s}/\text{cm}$		870			
TDS, ppm		565			
'P' Alkalinity, ppm as CaCO_3	80 - 120	92			
Total Hardness, ppm as CaCO_3					
Calcium Hardness, ppm as CaCO_3	100 - 500	165			
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	1.26			
Cyanuric Acid	20 - 60	24			

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: 12-04-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-03-2020

HYDRO POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	HOT HYDRO POOL			
pH	7.2 - 7.6	7.47			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	697			
TDS, ppm	Max 1000	453			
'P' Alkalinity, ppm as CaCO_3	80 - 120	29			
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 ⇨	No Action Recommended.
Chlorine level is 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:		



CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 12-04-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-03-2020

HYDRO POOL WATER ANALYSIS

PARAMETER	CONTROL LIMITS	COLD HYDRO POOL			
pH	7.2 - 7.6	7.49			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	248			
TDS, ppm	Max 1000	161			
'P' Alkalinity, ppm as CaCO_3	80 - 120	27			
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	0.08			
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:	

