2019 Water Quality Report to
Water Facilities Authority Member Agencies

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range	Average	Major Sources in Drinking Water
CLARITY							
Combined Filter Effluent Turbidity	NTU %	TT=1 NTU TT (a)	NA	NA	0.22 Highest % ≤ 0.3 100%		Soil runoff
MICROBIOLOGICAL							
Total Coliform Bacteria	%	5.0 (b)	(0)	NA	0 - 1.8	0.2	Naturally present in the environment
E. coli	(c)	(c)	(0)	NA	ND	ND	Human and animal fecal waste
SYNTHETIC ORGANIC CONTAMINANTS							
1,2,3-Trichloropropane	ppb	0.005	0.0007	0.005	ND	ND	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites.
INORGANIC CHEMICALS							
Aluminum (d)	ppb	1000	600	50	ND - 52	13	Residue from water treatment process; Erosion of natural deposits
Arsenic	ppb	10	0.004	2	ND	ND	Natural deposits erosion, glass and electronics production wastes
Fluoride (naturally-occurring)	ppm	2	1	0.1	ND	ND	Erosion of natural deposits; water additive that promotes strong teeth
Nitrate (as N) (e)	ppm	10	10	0.4	ND - 2.7	0.9	Runoff & leaching from fertilizer use; sewage; erosion of natural deposits
Nitrite (as N)	ppm	1	1	0.4	ND	ND	Runoff & leaching from fertilizer use; sewage; erosion of natural deposits
Nitrate and Nitrite (as N)	ppm	10	10	0.4	ND - 2.7	0.9	Runoff & leaching from fertilizer use; sewage; erosion of natural deposits
RADIOLOGICALS							
Gross Alpha Particle Activity	pCi/L	15	(0)	3	ND - 4.3	1.1	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCTS PRECURSORS							
Total Trihalomethanes (f)	ppb	80	NA	1	22 - 74	46	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (f)	ppb	60	NA	1	6 - 14	10	By-product of drinking water chlorination
Total Chlorine Residual (Distribution System-wide)	ppm	[4.0]	[4.0]	NA	1.18 - 1.32	1.24	Drinking water disinfectant added for treatment
DBP Precursors Control Total Organic Carbon (TOC)	ppm	TT	NA	0.30	TT	TT	Various natural and man-made sources
SECONDARY STANDARDS-Aesthetic Standards							
Aluminum (d)	ppb	200	600	50	ND - 52	13	Residue from water treatment process; Erosion of natural deposits
Chloride	ppm	500	NA	NA	28 - 93	48	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	ND	ND	Naturally occurring organic materials
MBAS	ppb	500	NA	NA	ND	ND	Natural deposits erosion: wood preservatives leaching
Odor Threshold	TON	3	NA	1	ND - 4.0	1.5	Naturally occurring organic materials
Specific Conductance	µS/cm	1600	NA	NA	260 - 530	343	Substances that form ions when in water; seawater influence
Sulfate	ppm	500	NA	0.5	20 - 39	24	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	ppm	1000	NA	NA	140 - 280	203	Runoff/leaching from natural deposits; seawater influence
Turbidity (a)	NTU	5	NA	0.1	ND - 0.14	0.10	Soil runoff
Iron	ppb	300	NA	100	ND	ND	Leaching from natural deposits; industrial wastes

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OTHER PARAMETERS							
Alkalinity	ppm	NA	NA	NA	38 - 74	57	
Bicarbonate	ppm	NA	NA	NA	46 - 90	69	
Boron	ppb	NL=1000	NA	100	ND - 100	25	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	NA	NA	13 - 20	16	
Corrosivity (g) as (Aggressiveness Index)	AI	NA	NA	NA	11 - 12	12	Elemental balance in water; affected by temperature, other factors
Corrosivity (h) as (Saturation Index Index)	SI	NA	NA	NA	-0.3 - 0.5	0.1	Elemental balance in water; affected by temperature, other factors
Hardness ($CaCO_3$) (Total Hardness)	ppm	NA	NA	NA	57 - 99	73	Leaching from natural deposits
Magnesium	ppm	NA	NA	NA	6.0 - 12.0	8.2	
pH	pH Units	NA	NA	NA	7.9 - 8.2	8.1	
Potassium	ppm	NA	NA	NA	1.5 - 3.1	2.0	
Sodium	ppm	NA	NA	NA	26 - 61	37	Runoff/leaching from natural deposits; seawater influence
TOC	ppm	TT	NA	0.3	1.4 - 2.9	2.1	Various natural and man-made sources
Vanadium	ppb	NL=50	NA	3	ND	ND	Naturally-occurring; industrial waste discharge

ABBREVIATIONS

DBP	Disinfection by-products	NTU	Nephelometric Turbidity Units
DLR	Detection Limits for Purpose of Reporting	pCi/L	PicoCouries per liter
MCL	Maximum Contaminate Level	PHG	Public Health Goal
MCLG	Maximum Contaminant Level Goal	ppb	Parts Per Billion
MRDL	Maximum Residual Disinfectant Level	ppm	Parts Per Million
MRDLG	Maximum Residual Disinfectant Level Goal	TOC	Total Organic Carbon
NA	Not Applicable	TON	Threshold Odor Number
ND	Monitored for but not detected	TT	Treatment Techniques
NL	Notification Level	µS/cm	MicroSiemen per centimeter

FOOTNOTES

(a) As a Primary Standard, the turbidity levels of the combined filtered water were less than or equal to 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. Turbidity, a measure of cloudiness of the water, is an indicator of the treatment performance. Turbidity was in compliance with the TT primary drinking water standard and the secondary drinking water standard of less than 5 NTU.

(b) Total coliform Rule: No more than 5% of the monthly samples may be total coliform-positive. Standards and results are based on distribution system monthly sampling averages. In 2019, 588 samples were analyzed and one (1) sample was positive for total coliforms. The MCL was not violated.

(c) E. Coli MCL: The occurrence of two (2) consecutive total coliform positive samples, one of which contains E. Coli constitutes an acute MCL violation. The MCL was not violated in 2019.

(d) Aluminum has both primary and secondary standards.

(e) Nitrate is reported either as NO_3 or as nitrogen N. To convert data from N to NO_3, multiply by 4.43

(f) WFA was in compliance with all provisions of Stage 2 Disinfectant/Disinfection By-Products Rules (D/DBPR).Compliance was based on the highest Locational Running Annual Average (LRAA) of all data collected at distribution system-wide monitoring locations. The averages reported for THM's and HAA5 is the highest LRAA.

(g) AI ≥ 12.0 =Non-aggressive water, AI (10.0-11.9) =Moderately aggressive water, AI ≤ 10.0 =Highly aggressive water

(h) Positive SI index=Non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index=corrosive; tendency to dissolve calcium carbonate.