PRIMARY STANDARDS - Mandatory Health-Related Standards

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Water Source		Major Sources in Drinking Water
CLARITY								
Combined Filter Effluent Turbidity	%	95[a]	NA	--	% < 0.3	100	Metropolitan Water District	Soil runoff
	NTU	TT 0.3			Highest	0.08	Henry J. Mills Water Treatment Plant	
Combined Filter Effluent Turbidity	%	95[a]	NA	--	% < 0.3	100	City of Corona, Lester & Sierra Del Oro Water Treatment Facilities	Soil runoff
	NTU	TT 0.3			Highest	0.07		

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Regulated in Distribution System	Major Sources in Drinking Water
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform Bacteria (State Total Coliform Rule)	%	5.0 [b]	(0)	--	--	Highest % of positive samples collected in any one month = 1%	Naturally present in the environment
Fecal Coliform and E. Coli (State Total Coliform Rule)	[c]	[c]	(0)	--	--	Total number of positive samples collected in 2018 = 0	Human and animal fecal waste
Total Coliform Bacteria (Federal Total Coliform Rule)	%	TT [d]	--	--	--	Highest % of positive samples collected in any one month = 1%	Naturally present in the environment
Fecal Coliform and E. Coli (Federal Total Coliform Rule)	[e]	[e]	(0)	--	--	Total number of positive samples collected in 2018 = 0	Human and animal fecal waste
Heterotrophic Plate Count (HPC)	CFU/mL	TT	NA	NA	Range	Distribution System Wide: ND-1,200	Naturally present in the environment
					Average	Distribution System Wide: 8	

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Arlington Desalter	Ground Water	Treated Average System Water	Major Sources in Drinking Water
RADIOACTIVE CONTAMINANTS (w)											
Gross Alpha Particle Activity [k]	pCi/L	15	(0)	3	Range	ND	ND-3.2	3.31	ND-**16.5**	-	Erosion of natural deposits
					Average	ND	ND	3.31	5.82	-	
Uranium	pCi/L	20	0.43	1	Range	ND	2.8-3.3	2.37	ND-18	-	Erosion of natural deposits
					Average	ND	3.1	2.37	6.78	-	
INORGANIC CONTAMINANTS											
Arsenic	µg/L	10	0.004	2	Range	ND	2.3	ND	ND-7.2	ND-3.9	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
					Average	ND	2.3	ND	2.4	2.5	
Barium	mg/L	1	2	0.1	Range	ND	0.12	ND	ND-0.9	ND-0.1	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
					Average	ND	0.12	ND	0.2	ND	
Fluoride [h, t]	mg/L	2.0	1	0.1	Range	0.6-0.9	0.3	ND	0.24-0.42	ND-0.76	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
					Average	0.8	0.3	ND	0.30	0.27	
Nitrate (as Nitrogen) [k, t]	mg/L	10 (as N)	10 (as N)	0.4	Range	0.6	ND	3.8-5	2.4-**20**	ND-7.2	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
					Average	0.6	ND	4.4	11	3.6	
Perchlorate [k, t]	µg/L	6	1	4	Range	ND	ND	ND	ND-**9**	ND	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts.
					Average	ND	ND	ND	ND	ND	
Selenium	µg/L	50	30	5	Range	ND	ND	ND	ND-14	ND	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
					Average	ND	ND	ND	ND	ND	
SYNTHETIC ORGANIC CONTAMINANTS including Pesticides/PCBs											
Dibromochloro-propane (DBCP)	ng/L	200	1.7	10	Range	ND	ND	ND-1.4	ND-29	ND	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit
					Average	ND	ND	0.8	ND	ND	
1,2,3-Trichloropropane (1,2,3-TCP)[k, t, u]	µg/L	0.005	0.0007	0.005	Range	ND	ND	-	ND-**0.037**	ND	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.
					Average	ND	ND	-	ND	ND	
VOLATILE ORGANIC CONTAMINANTS											
Tetrachloroethylene (PCE)	µg/L	5	0.06	0.5	Range	ND	ND	ND	ND-0.63	ND	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
					Average	ND	ND	ND	ND	ND	
Trichloroethylene (TCE)	µg/L	5	1.7	0.5	Range	ND	ND	ND	ND-1.6	ND	Discharge from metal degreasing sites and other factories
					Average	ND	ND	ND	0.67	ND	

SECONDARY STANDARDS - Aesthetic Standards

Aluminum [i]	µg/L	200	600	50	Range	ND-120	ND	ND	ND	ND-**370**	Erosion of natural deposits; residual from some surface water treatment processes
					Max RAA	58	ND	ND	ND	200	
Chloride	mg/L	500	NA	NA	Range	79-91	90-95	40-42	54-260	30-110	Runoff/leaching from natural deposits; seawater influence
					Average	85	92	41	152	71	
Corrosivity (as Aggressiveness Index)	AI	NA	NA	NA	Range	11.9-12.1	-	-	12-13	10-12	Elemental balance in water; affected by temperature, other factors
					Average	12	-	-	13	12	
Manganese [f, k]	µg/L	50	NL=500	20	Range	ND	ND	ND	ND-**62**	ND	Leaching from natural deposits
					Average	ND	ND	ND	ND	ND	
Odor Threshold	Units	3	NA	NA	Range	2	7	ND	ND-2	2	Naturally-occurring organic materials
					Average	2	7	ND	1	2	
Specific Conductance [k]	µS/ cm	1600	NA	NA	Range	514-518	981-1,010	385-796	900-**2,000**	212-1,090	Substances that form ions when in water; seawater influence
					Average	516	996	448	1,373	650	
Sulfate	mg/L	500	NA	0.5	Range	43-46	224-240	42-47	140-380	3.6-230	Runoff/leaching from natural deposits; industrial wastes
					Average	44	232	45	211	115	
Total Dissolved Solids [j, k, t]	mg/L	1000	NA	NA	Range	239-244	612-637	230-260	530-**1,300**	140-730	Runoff/leaching from natural deposits
					Average	242	624	249	890	400	
Turbidity	NTU	5	NA	NA	Range	ND\	0.7-1.4	ND-0.15	ND-0.13	ND-0.11	Soil runoff
					Average	ND	1.1	ND	0.05	0.04	

UNREGULATED CONTAMINANTS WITH NO MCLs (g)											Health Effects
Boron [p]	mg/L	NA	NL=1	0.1	Range	0.16	0.13	-	0.39-0.45	0.13-0.3	The babies of some pregnant women who drink water containing boron in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.
					Average	0.16	0.13	-	0.41	0.22	
Hexavalent Chromium [v]	µg/L	NA	0.02	1	Range	ND	ND	-	ND-1.9	ND	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
					Average	ND	ND	-	ND	ND	
Perfluorooctanoic acid (PFOA)	ng/L	NA	NL=14	NA	Range	-	-	-	ND-140	ND-27	Perfluorooctanoic acid exposures resulted in increased liver weight in laboratory animals.
					Average	-	-	-	48	6.1	
Perfluorooctanesulfonate acid (PFOS)	ng/L	NA	NL=13	NA	Range	-	-	-	ND-200	ND-24	Perfluorooctanesulfonic acid exposures resulted in immune suppression, specifically, a decrease in antibody response to an exogenous antigen challenge.
					Average	-	-	-	44	5.2	
Vanadium	µg/L	NA	NL=50	3	Range	ND	ND	5.5-6.1	ND-7.5	ND-4	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.
					Average	ND	ND	5.8	4.1	ND	

OTHER PARAMETERS

Chemical	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Arlington Desalter	Ground Water	Treated Average System Water
Alkalinity	mg/L	NA	NA	NA	Range	66-74	109-123	82-110	130-350	29-110
					Average	70	116	93	235	73
Bicarbonate	mg/L	NA	NA	NA	Range	-	-	82-110	160-430	35-150
					Average	-	-	93	287	89
Calcium	mg/L	NA	NA	NA	Range	16-20	67-69	29-30	60-200	5.4-79
					Average	18	68	29	131	41.3
Hardness [q]	mg/L	NA	NA	NA	Range	86-98	272-278	120	220-700	18-350
					Average	92	275	120	473	163
Magnesium	mg/L	NA	NA	NA	Range	11-12	26	10-11	16-72	1.2-29
					Average	12	26	11	36	14.5
pH	pH Units	NA	NA	NA	Range	8.4-8.5	8.1-8.2	6.85-8.6	6.3-7.8	7.5-8.9
					Average	8.5	8.1	8.1	7	8.1
Potassium	mg/L	NA	NA	NA	Range	2.8-2.9	4.6	1-1.1	1-10	ND-5
					Average	2.8	4.6	1.05	4.1	3
Sodium [r]	mg/L	NA	NA	NA	Range	62-63	92-93	39	53-180	35-94
					Average	62	92	39	114	68

2019 ANNUAL WATER QUALITY REPORT FOR 2018

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average/LRAA/RAA	Distribution System Wide	Major Sources in Drinking Water	Health Effects Language
DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS FEDERAL RULE (m)								
Total Trihalomethanes (TTHMs) (n)	µg/L	80	NA	1	Range	ND-31	Byproduct of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.
					LRAA	27.0		
HAA5 (o)	µg/L	60	NA	1	Range	ND-26	Byproduct of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
					LRAA	13.3		
Bromate (Mills - WR-24 Conn.) (l)	µg/L	10	0.1	1	Range	ND-10	Byproduct of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
					Max RAA	3.7		
Chloramines	mg/L	[4 as Cl2]	[4 as Cl2]	NA	Range	0.4-2.98	Drinking water disinfectant added for treatment	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
					Max RAA	1.8		
Control of DBP precursors (TOC)	mg/L	TT	NA	0.3	Range	1.9-3.2	Various natural and manmade sources	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.
					Average	2.6		

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Distribution System
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR 3) (s)						
List 1 - Assessment Monitoring						
1,4-Dioxane	µg/L	NA	NA	0.07	Range	ND-0.14
					Average	ND
Chlorate	µg/L	NA	NA	20	Range	75-360
					Average	155
Chromium	µg/L	NA	NA	0.2	Range	ND-0.52
					Average	ND
Hexavalent Chromium (Dissolved)	µg/L	NA	NA	0.03	Range	ND-0.43
					Average	0.134
Molybdenum	µg/L	NA	NA	1	Range	ND-17
					Average	3.6
Strontium	µg/L	NA	NA	0.3	Range	25-1,100
					Average	591
Vanadium	µg/L	NA	NA	0.2	Range	ND-6.4
					Average	2.4
Perfluoro octanesulfonic acid - PFOS	µg/L	NA	NA	0.04	Range	ND-0.046
					Average	ND
Perfluorooctanoic acid - PFOA	µg/L	NA	NA	0.02	Range	ND-0.042
					Average	ND
Perfluoroheptanoic acid - PFHpA	µg/L	NA	NA	0.01	Range	ND-0.013
					Average	ND

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Distribution System
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR 4) (x)						
Haloactic Acid (HAA) Group						
HAA5 [o]	µg/L	NA	NA	NA	Range	ND-15.8
					Average	6.35
HAA6Br [y]	µg/L	NA	NA	NA	Range	ND-13.91
					Average	6.32
HAA9 [z]	µg/L	NA	NA	NA	Range	ND-26.1
					Average	10.86
Total Organic Carbon	µg/L	NA	NA	NA	Range	ND-2,600
					Average	1,733
Bromide	µg/L	NA	NA	NA	Range	ND-32
					Average	20

Footnotes

(a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.

(b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants. In 2018, 1567 samples were analyzed and one was positive for total coliform. The MCL was not violated.

(c) *E. coli* MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.

(d) Total coliform TT trigger, Level 1 assessments, and total coliform TT violations: More than 5.0% total coliform-positive samples in a month trigger Level 1 assessments. Failure to conduct assessments and correct findings within 30 days is a total coliform violation. No triggers, Level 1 assessments, or violations occurred.

(e) *E. coli* MCL and Level 2 TT triggers for assessments: Routine and repeat samples are total coliform-positive and either sample is E. coli-positive or system fails to collect all repeat samples following an E. coli-positive sample, or fails to test for E. coli when the repeat sample is total coliform-positive. No samples were E. coli-positive. No MCLs violations or no assessments occurred.

(f) The high concentration of Manganese is from one groundwater wells; refer to the “Treated Average System Water” column for a more accurate representation of system water quality.

(g) Unregulated contaminant monitoring helps the USEPA and the State Board determine where certain contaminants occur and whether the contaminants need to be regulated.

(h) City of Corona was in compliance with all provisions of the State's Fluoridation System Requirements. This is part of the City of Corona’s blending plan to reduce the levels of fluoride being delivered to the consumer's tap. Refer to the “Treated Average System Water” column for a more accurate representation of system water quality.

(i) Aluminum has a secondary standard limit. In 2018, the secondary standard limit was exceeded but the maximum running annual average (Max RAA) was in compliance. Our current Max RAA for 2019 is 102 ug/L.

(j) Total Dissolved Solids (TDS) is a measure of the total amount of all the materials that are dissolved in water. These minerals, both natural and anthropogenic (made by humans), are mainly inorganic solids, with a minor amount of organic material.

(k) This constituent was detected at levels exceeding the MCL, results shown in bold. Please note that this water is blended with water from other sources to provide customers with the highest quality drinking water.

(l) Reported from Mills Filtration Plant Metropolitan Water District (MWD). Mills MWD water is blended with other Corona water sources. Please note that this water is blended with water from other sources to provide customers with the highest quality drinking water.

(m) The City of Corona was in compliance with all provisions of the Stage 2 Disinfectants and Disinfection Byproducts Rules (D/DBP). Compliance was based on the locational running annual average (LRAA). The average reported reflects the highest TTHM and HAA5 LRAAs for the year.

(n) Total Trihalomethanes is the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

(o) HAA5 is the sum of dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid, and monochloroacetic acid.

(p) The sources that were detected for Boron are all directed to the Temescal Desalter for reverse osmosis treatment. The treated water is monitored at the effluent of the facility which is represented in the "Treated Average System Water" column.

(q) Hardness is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.

(r) Sodium refers to the salt present in the water and is generally naturally occurring.

(s) Data was collected in 2014 and reported per UCMR 3 guidance. Minimum reporting levels are as stipulated in the Federal UCMR 3. List 1 - Assessment Monitoring consists of 21 chemical contaminants for which standard analytical methods were available. All analyses conducted by contract laboratories. Values listed in state DLR column are federal minimum reporting

(t) Fluoride, nitrate, perchlorate, TDS, and 1,2,3-TCP are a part of Corona's blending remediation plan to reduce the levels being delivered to the consumer's tap. Refer to the "Treated Average System Water" column for a more accurate representation of system water quality.

(u) 1,2,3-Trichloropropane (1,2,3-TCP) had a notification level (NL) of 0.005 ug/L until December 14, 2017, when the MCL of 0.005 ug/L became effective. 1,2,3-TCP was monitored quarterly in Corona's source and treated waters for the State's initial monitoring requirement and continues to monitor per our Blending Plan requirements.

(v) There is currently no MCL for hexavalent chromium. The previous MCL of 0.010 mg/L (10 ug/L) was withdrawn on September 11, 2017. However, any hexavalent chromium results above the detection limit of 0.0001 mg/L (1 ug/L) have been reported.

(w) Results included in this section range from 2009-2017. Levels reported for gross alpha were determined using the net gross alpha calculation.

(x) UCMR 4 sampling began in 2018. Minimum reporting levels are as stipulated in the Federal UCMR 4. Monitoring under UCMR4 will continue through 2019 and detected results will be included in the CCR.

(y) HAA6Br: Bromochloroacetic acid, bromodichloroacetic acid, dibromoacetic acid, dibromochloroacetic acid, monobromoacetic acid, and tribromoacetic acid.

(z) HAA9: Bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, and trichloroacetic acid.