

City of Corona



Water Utilities Department



WATER

Quality Report

1999



Your Water Department

In 1964 the City of Corona purchased the assets of the Corona City Water Company, thereby creating the City of Corona Water Utilities Department. Since its early inception, the Water Utilities Department has grown in assets including three multi-million dollar treatment facilities; additionally, developing local drinking water wells, constructing numerous storage reservoirs, and building miles of new water distribution lines, for the goal of providing water reliability, quality, and service through commitment.

Corona's Water Supply



In order to meet the 30 million gallon per day consumer demand for water, the City operates and maintains 21 potable ground water wells which provide 52% of the necessary water supply. The additional 48% is purchased from Metropolitan Water District's water supply which comes from the Colorado River Aqueduct and the State Water Project from Northern California. However, our dependency on imported water will decrease and the percentage will change in light of the City's new Temescal Desalter scheduled for completion by the end of the year 2000.



Water Treatment



The purchased Colorado River water is stored in Lake Mathews and treated at two facilities--our Sierra Del Oro and Lester Treatment Plants, which combined, have a capacity to treat 26 million gallons of water per day. Treatment involves adding chlorine to kill bacteria, adding compounds to aid in the removal of suspended solids, filtration, and final disinfection with chloramine. Water pumped from City wells does not require filtration, but is disinfected with chloramine when blended with treated water to ensure protection from bacterial contamination.



Commitment



The City's quality drinking water is tested on a regular basis at each water source and at numerous points throughout the water distribution system. Water samples are collected by laboratory technicians and analyzed by an independent state certified water quality laboratory on a weekly basis to guarantee public safety.

Our Measurements

Until recently, drinking water laboratories could only detect measurements of parts per million (ppm). Today's sophisticated equipment makes it possible to measure previously undetectable amounts down to parts per billion (ppb). To put these units of measurement into perspective, consider that one part per billion is equivalent to one cent in \$10,000,000. Most of the water quality parameters contained in this report have been analyzed using equipment and procedures capable of measurements in the parts per billion range.

Standards

Drinking water standards have been established by the State of California Department of Health Services, and the U.S. Environmental Protection Agency (EPA). The City of Corona Water Utilities Department's compliance with these standards assures our customers of high quality safe drinking water. California has adopted the EPA standards and made some of them more restrictive for substances such as vinyl chloride, which is permitted at only one quarter the EPA level.

Primary Standards protect the public health from substances in the water. They govern substances which may be immediately harmful to humans or affect their health if consumed over a lifetime.

Secondary Standards govern the aesthetic qualities of water, including taste, odor, clarity, and mineral content. These standards specify limits for substances which affect whether or not consumers find the water acceptable. Exceeding these levels is not generally dangerous to health.

Primary Standards

Clarity indicates the presence of suspended matter such as clay, silt, organic particles and microscopic organisms. Not only do particles make water unacceptable to the consumer, but they can shield microorganisms from the action of disinfectants. Clarity is also a secondary or aesthetic standard.

Microbiological Organisms are sampled for at the source and throughout the system each week. Testing is performed at an independent laboratory with more than 140 samples taken each month. The absence of these organisms indicates the potable or sanitary quality of the water and protection from waterborne disease.

Organic Compounds used in industrial, commercial, agricultural, and household activities have concerned the public because of their potential effects on health and the environment. Corona Water Utilities monitors each source for more than 55 different organic compounds once each year.

Inorganic Chemicals include nitrates and fluoride, the most commonly asked about inorganic chemicals. Agricultural activity is the primary source of nitrate. Our drinking water averages about 29.0 ppm. Fluoride occurs naturally in Corona's water at levels which average 0.3 ppm.

Radioactivity is a naturally occurring phenomenon in ground water and is monitored quarterly on a four-year cycle.

Secondary Standards

Hardness is largely dissolved calcium and magnesium that may cause a mineral deposit on fixtures and dishes. These minerals are harmless, but they cause temporary white spots on drinking glasses and make soap difficult to lather. Like other minerals in water, calcium and magnesium have dietary benefits. Our bodies require calcium and magnesium. In Corona, hardness averages 291 ppm or 17 grains per gallon, being hard to very hard.

Air in the water can cause a milky appearance. Water which contains dissolved air is delivered to our homes under pressure. Turning on the faucet releases the pressure, causing air bubbles to appear. Like the carbon dioxide in soft drinks, the tiny air bubbles rise to the surface. Clearing begins at the bottom of the container and within a minute the water is clear.

Sand in the water may be an annoyance in some areas of Corona. Almost all sand is removed from well water entering the system. Small amounts that escape can settle in the bottom of large pipelines. Sand is regularly removed from the system through flushing at fire hydrants and flushing valves.



Primary Standards

Mandatory health-related standards established by the State of California, Department of Health Services

Parameter	Maximum Contaminant Level	MCLG or PHG	Ground Water Sources		Surface Water Sources and Green River Area		Corona Blended Water
			Range	Average (a)	Range	Average	
CLARITY (NTU)							
Turbidity	5 UNITS	NS	0.11 - 0.51	0.23	0.06 - 0.25	0.17	0.44
MICROBIOLOGICAL (%) distribution system samples							
Total Coliform Bacteria (b)	5.0%	0	Distribution-System-Wide Range = 0 - 2.0% Distribution-System-Wide Average = 0 - 0.2%				
VOLATILE ORGANIC CHEMICALS (mg/L)							
Tetrachloroethylene (PCE)	0.005	0	ND - 0.001	ND	ND	ND	ND
Trichloroethylene (TCE)	0.005	0	ND - 0.0033	0.001	ND	ND	ND
Total Trihalomethanes (THM) (c)	0.10	NS	ND - 0.0206	0.002	ND	ND	0.01
INORGANIC CHEMICALS (mg/L)							
Aluminum (AL)	1.0	NS	ND - 0.06	ND	ND - 0.066	0.04	0.008
Arsenic (AS)	0.05	NS	ND - 0.009	0.003	ND - 0.0028	ND	0.003
Barium (Ba)	1.0	2.0	ND - 0.128	0.049	0.026 - 0.131	0.01	0.056
Cadmium (Cd)	0.005	0.005	ND	ND	ND - 0.0024	ND	ND
Nitrate (NO3) (d)	45	45	5.0 - 95	38	0.02 - 0.69	<1	23.0
Fluoride (F) (e)	2.0	1.0	ND - 0.50	0.36	0.07 - 0.33	0.19	0.3
RADIONUCLIDES (pCi/L)							
Gross Alpha Particle Activity	15 pCi/L	NS	2.6 - 7.5	4.7	ND - 8.9	2.8	4.5

KEY TO ABBREVIATIONS:

MCL = Maximum Contaminant Level
 mg/L = Milligrams per Liter (parts per million)
 ND = Monitored for but Not Detected--(detection limits are available upon request)
 NS = No Standard
 NTU = Nephelometric Turbidity Units. This is measure of the suspended material in water.
 pCi/L = Picrocuries per Liter
 umho/cm = Micromhos per centimeter
 < = Less Than

NOTES:

- For averaging purposes, ND is considered Zero.
- Results are based on distribution system sampling; during any month 95% or more of the samples taken and all repeat samples shall be free of total coliform.
- Source-water results are from a separate volatile organic monitoring program.
- Standard is for water delivered to the customer. Although levels for some wells exceeded the MCL, blended water is less than MCL at all times.
- Fluoride Standard depends on temperature.

Secondary Standards

Aesthetic standards established by the State of California, Department of Health Services

Parameter	Maximum Contaminant Level	MCLG or PHG	Ground Water Sources		Surface Water Sources and Green River Area		Corona Blended Water
			Range	Average (a)	Range	Average	
CHEMICAL PARAMETERS (mg/L)							
Chloride (CL)	500	NS	27 - 133	77	46 - 94	65	72
Color (units)	15 UNITS	NS	<1	<1	<3	<3	2
Copper (Cu)	1.0	0.17	ND	ND	ND	ND	ND
Foaming agent (MBAS)	0.5	NS	<0.04 - <0.05	<0.04	ND	0.03	<0.04
Iron (Fe)	0.3	NS	ND - 0.51	0.01	ND - 0.075	0.01	0.02
Manganese (Mn)	0.05	NS	ND	ND	ND - 0.011	ND	ND
Odor-Threshold (units)	3 UNITS	NS	<1	<1	<1	<1	<1
PH (units)	NS	NS	6.9 - 7.6	7.3	7.3 - 7.6	7.4	7.7
Specific Conductance (umho/cm)	1600	NS	599 - 1294	911	348 - 1056	752	820
Sulfate (SO4)	500	NS	102 - 216	152	24 - 218	146	148
Total Dissolved Solids (TDS)	1000	NS	388 - 912	642	192 - 674	475	553
ADDITIONAL PARAMETERS (mg/L)							
Alkalinity (As CaCO3)	NS	NS	99 - 243	173	58 - 135	103	144
Bicarbonate (HCO3)	NS	NS	120 - 296	211	92 - 160	126	175
Carbonate (CO3)	NS	NS	ND	ND	ND	ND	0.17
Calcium (Ca)	NS	NS	60 - 134	100	18 - 78	46	80
Hardness (As CaCO3)	NS	NS	216 - 470	353	82 - 320	229	291
Magnesium (Mg)	NS	NS	14 - 36	25	9.5 - 31	20	22
Potassium (K)	NS	NS	1.3 - 4.5	2.6	2.2 - 4.0	3.6	2.9
Sodium (Na)	NS	NS	34 - 110	71	33 - 102	70	69

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the PHGs and MCLGs as is economically or technologically feasible.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard: Primary MCLs, specific treatment techniques adopted in lieu of primary MCLs, and monitoring and reporting requirements for MCLs that are specified in regulations.



New Sources of Water

Corona is reliant upon expensive imported water to meet consumer demand. One way to reduce the amount of expensive imported water needed, is to develop and implement water conservation practices. One of the newest practices Corona is currently undertaking is the development of a water recycling program. Through this program, the Water Utilities Department will be able to replace expensive imported drinking water used on irrigation and landscapes with recycled non-potable water.

Recycled water comes from wastewater that is treated and purified to remove impurities. The recycled water meets the same stringent standards mandated by State and Federal requirements for our drinking water. As an extra precaution, recycled water is not used for human consumption.

Corona has also adopted new practices to increase the supply of cheaper local groundwater: construction of new wells; replacement of older equipment; and refurbishing pumps and motors. In addition to developing new water supply, the Water Utilities Department has implemented new practices to lower operational expenses so that more of your dollars go towards water production, development of new supplies, and improving water quality. They include restructuring the operation and maintenance division to reduce costs and enhance productivity, negotiating lower electrical power rates, and use of City forces to perform smaller replacement projects.

What is the City of Corona doing about the hardness of water?

Many residents are familiar with white scale deposits that accumulate on coffeepots, plumbing fixtures, and shower doors. This scaling is caused by dissolved mineral salts in imported Colorado River water and local wells that are not removed by conventional water treatment. Water scientists refer to these mineral salts as total dissolved solids (TDS) or salinity.

To provide high quality water that is lower in hardness, TDS, and nitrates, the City of Corona is in the process of constructing a 10 million gallon per day desalter (Temescal Desalter). The construction will start in July 1999, and is expected to be completed by September 2000. The construction cost has been estimated to be approximately 30 million dollars. This project has been funded through the sale of water revenue bonds.





City of Corona

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