

WATER QUALITY 2021 Report



Municipal Water District
A subsidiary district of the City of Carlsbad

**Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.**

Water provided by the Carlsbad Municipal Water District meets all 2021 state and federal drinking water standards. This report provides detailed water quality test results and provides more information about where Carlsbad's water comes from.

Where our water comes from

CMWD currently imports 83% of its drinking water. The water supply begins hundreds of miles away as snow melt or rainfall that flows into rivers. The two main water sources are the Colorado River, where the water is transported through the Colorado River Aqueduct, and Northern California, that brings the water through the California Aqueduct (also known as the State Water Project.)

Water from these sources is treated by the Metropolitan Water District of Southern California at its Lake Skinner Treatment Plant in Riverside County and by the San Diego County Water Authority. After rigorous treatment, the water travels through San Diego County Water Authority owned pipelines and is purchased and distributed by CMWD to its customers. The Claude "Bud" Lewis Carlsbad Desalination Plant produces 17% of Carlsbad's water through the San Diego County Water Authority, which blends the water with the region's imported water supply and delivers it to water agencies throughout San Diego County.



What's in your water before it's treated?

The sources of drinking water (both tap water and bottled water) include oceans, rivers, lakes, streams, ponds, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that can come from wastewater treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, that can come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

CMWD
has met all
2021 federal and
state drinking
water standards.

2021 CARLSBAD WATER QUALITY ANALYSIS

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDL]	State DLR	Range Average	Skinner Plant Effluent	Twin Oaks Plant	CMWD System Samples	Carlsbad Desal Plant	Major Sources in Drinking Water
Percent State Project Water	%	NA	NA	NA	Range Average	0-55 6	NA NA	NA NA	NA NA	
PRIMARY STANDARDS--Mandatory Health-Related Standards										
CLARITY										
Combined Filter	NTU	TT=1			Highest	0.09	0.03	NA	0.09	
Effluent Turbidity(a)	%	TT (a)	NA	NA	% ≤ 0.3	100%	100%	NA	100.0%	Soil runoff
MICROBIOLOGICAL										
Total Coliform Bacteria (b)	%	5.0	MCLG=0	NA	Range Average	NA NA	ND ND	NA NA	0 ND	
E. coli (c)	NA	TT	MCLG=0	NA	Positive sample	NA	ND	ND	ND	Naturally present in the environment Human and animal fecal waste
INORGANIC CHEMICALS										
Arsenic	ppb	10	0.004	2	Range Average	ND ND	NA NA	NA NA	ND ND	Natural deposits erosion, glass and electronics, production wastes
2021 Copper Samples (e)	ppm	AL = 1.3	0.3	0.05	No.>AL 90%ile	NA NA	NA ND	0 0.14	ND ND	Internal corrosion of household pipes natural deposits erosion, next set of samples to be taken in 2024
Fluoride (d)	Control Range Optimal Fluoride Level					0.6 - 0.9 0.7	0.6 - 1.2 0.7	NA NA	NA NA	
Treatment-related Fluoride	ppm	2.0	1	0.1	Range Average	NA NA	0.6 - 0.7 0.6	NA NA	ND - 0.799 0.649	Erosion of natural deposits water additive that promotes strong teeth
2021 Lead Samples (e)	ppb	AL = 15	0.2	5	No.>AL 90%ile	0 ND	0 ND	0 1.4	0 ND	House pipes internal corrosion; erosion of natural deposits, next set of samples to be taken in 2024
Nitrate	ppm	10	10	0.4	Range Average	ND ND	ND ND	NA NA	ND ND	Runoff and leaching from fertilizer use, septic tank and sewage; natural deposits erosion
RADIOLOGICALS										
Uranium	pCi/L	20	0.43	1	Range Average	ND-3 ND	ND 1.0	NA NA	ND ND	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS (o)										
Total Trihalomethanes (f) (TTHM)	ppb	80	NA	1.0	Range Highest LRAA	8.3 - 40 21	18 - 34 34	0.00 - 24.0 22	ND ND	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (f)	ppb	60	NA	1.0	Range Highest LRAA	4.3 - 10 7.4	ND - 5 5.0	0.00 - 6.1 6.8	ND ND	By-product of drinking water chlorination
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Range Highest RAA	NA NA	2.3 - 3.2 3.2	0.37 - 3.50 2.54	2.88 - 3.39 3.11	Drinking water disinfectant added for treatment
Bromate (g)	ppb	10	0.1	1.0	Range Highest RAA	ND - 2.5 1.0	ND - 6 2.0	NA NA	NA NA	By-product of drinking water ozonation
SECONDARY STANDARDS - Aesthetic Standards										
Chloride	ppm	500	NA	NA	Range Sample	92 - 97 94	NA 99	NA NA	54 - 96 73	Runoff leaching from natural deposits seawater influence
Color	Units	15	NA	NA	Range Average	NA 1	ND ND	NA NA	ND ND	Naturally-occurring organic materials
Odor Threshold	TON	3	NA	1	Range Average	NA 2	ND ND	NA NA	ND ND	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	NA	NA	Range Average	918 - 956 937	NA 940	NA NA	301.4 - 494.9 406.44	Substances that form ions in water seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	197 - 221 209	NA 220	NA NA	10.0 - 14.0 12.3	Runoff leaching from natural deposits Industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	Range Average	557 - 604 580	NA 610	NA NA	140 - 278 209.0	Runoff leaching from natural deposits seawater influence
OTHER PARAMETERS										
CHEMICAL										
Alkalinity	ppm	NA	NA	NA	Range Average	121 - 123 122	NA 120	NA NA	46 - 92 63.0	
Boron	ppb	NL=1,000	NA	100	Range Average	140 NA	NA 120	NA NA	0.40 - 0.81 0.59	Runoff leaching from natural deposits, Industrial wastes
Calcium	ppm	NA	NA	NA	Range Sample	62 64 63	NA 67	NA NA	16.72 - 34.92 20.6	
Chlorate	ppb	NL=800	NA	20	Range Average	49 258	160 - 370 258	NA NA	NA NA	By-product of drinking water chlorination Industrial processes
Chromium VI (h)	ppb	10	0.02	1	Range Average	ND 0.6	ND - 0.22 NA	NA NA	NA NA	Runoff leaching from natural deposits; discharge from industrial waste factories
Corrosivity (i)(as Aggressiveness Index)	AI	NA	NA	NA	Range Average	12.4 13	NA NA	NA NA	10.3 - 10.89 10.54	Elemental balance in water; affected by temperature, other factors
Corrosivity (j)(as Saturation Index)	SI	NA	NA	NA	Range Average	0.61 - 0.62 0.62	NA 0.74	NA NA	0.04 - 0.49 0.24	Elemental balance in water affected by temperature & other factors
Hardness	ppm	NA	NA	NA	Range Average	264 - 273 268	NA 270	NA NA	41.8 - 87.3 51.6	
Magnesium	ppm	NA	NA	NA	Range Sample	ND 24	ND 24	NA NA	0.86 - 1.2 1.06	
pH	pH	NA	NA	NA	Range Average	8.1 - 8.2 8.1	8.1 - 8.2 8.2	NA NA	8.10 - 8.70 8.51	
Potassium	ppm	NA	NA	NA	Range Average	4.3 - 4.7 4.5	NA 4.6	NA NA	0.00 - 61.441 10.950	
Sodium	ppm	NA	NA	NA	Range Average	92 - 95 94	NA 93	NA NA	53 - 67 59.0	
TOC	ppm	TT	NA	0.30	Range Average	2.2 - 2.7 2.5	2.3 - 2.70 2.5	NA NA	NA NA	Various natural and man-made sources
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	2	Range D.Wide	ND NA	ND ND	NA NA	NA NA	By-product of drinking water

How to read this report

As you read the water quality tables in this report, compare the level of contaminants found in CMWD's water in the "Skinner Plant", "Twin Oaks Valley Plant", and "Desal plant" columns with the standards set for them in the MCL and PHG columns. The CMWD met all drinking water standards in 2021.

The following are key terms to help you understand the standards used to measure drinking water safety.

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

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.

Maximum Residual Disinfectant Level (MRDL) The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS) MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Treatment Technique A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

This report can be downloaded from www.carlsbadca.gov/water-quality-report



Abbreviations

AI	Aggressiveness Index
AL	Action Level
CDPH	California Department of Public Health
CFE	Combined Filter Effluent
CFU	Colony-Forming Units
DBP	Disinfection By-Products
DLR	Detection Limits for purposes of Reporting
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MFL	Million Fibers per Liter
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
N	Nitrogen
NA	Not Applicable
ND	Not Detected
NL	Notification Level
NTU	Nephelometric Turbidity Units
pCi/L	picoCuries per Liter
PHG	Public Health Goal
ppb	parts per billion or micrograms per liter (µg/L)
ppm	parts per million or milligrams per liter (mg/L)
ppq	parts per quadrillion or picograms per liter (pg/L)
ppt	parts per trillion or nanograms per liter (ng/L)
RAA	Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a 12-month period
SI	Saturation Index (Langelier)
TOC	Total Organic Carbon
TON	Threshold Odor Number
TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Required information for lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. CMWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead. CMWD has complied and meets Lead and Copper standards.

Footnotes

- (Skinner) As a Primary Standard, the turbidity levels of the filtered water were < 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. The turbidity levels for grab samples at these locations were in compliance with the Secondary Standard. (Twin Oaks) The turbidity level from the CFE of the membranes shall be < 0.1 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at any time. Turbidity, a measure of the cloudiness of water, is an indicator of treatment performance.
- Total coliform MCLs: No more than 5% of the monthly samples may be total coliform positive. Compliance is based on the combined distribution system sampling. In 2021, 1,560 samples were analyzed with no positive samples. The MCL was not violated.
- 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.
- Skinner and Twin Oaks were in compliance with all provisions of the State's Fluoridation System Requirements.
- Lead and copper are regulated by Action Levels under the Lead and Copper Rule, which requires water samples to be collected at the consumers' tap. If action levels are exceeded in more than 10% of the samples, water systems must take steps to reduce these contaminants.
- Twin Oaks/Skinner met all provisions of the Stage 1 Disinfectants/ Disinfection By-Products (D/DBP) Rule. Compliance was based on Locational RAA. Average and range for the treatment plant effluent were taken from daily and monthly samples for TTHM and HAA5.
- Twin Oaks running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is 2.0 ppb.
- Chromium VI reporting level is ND, which is below the state DLR of 1 ppb.
- AI <10.0 = Highly aggressive and very corrosive water. AI >12.0 = Non-aggressive water. AI (0.14 – 13.0) = Moderately aggressive water.
- Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate.

The U.S. Environmental Protection Agency and the State Water Resources Control Board have regulations that limit the amount of certain contaminants allowed in water provided by public water systems to ensure that tap water is safe to drink. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at 800-426-4791.

CMWD has sampled all required data including entry points in the distribution system for the fourth Unregulated Contaminant Monitoring Rule (UCMR 4) contaminants in 2020. The analytical results for UCMR 4 are stored in the National Contaminant Occurrence Database for drinking water, which can be found online at www.epa.gov/sdwa/national-contaminant-occurrence-database-ncod.

Water conservation

Carlsbad encourages residents and businesses to continue making water conservation a way of life. With water being a precious and limited resource, Carlsbad is doing our part by making water conservation and the efficient use of water a major priority. Even the simplest changes to daily routines make a difference.

Do your part by following the water conservation tips below, and visit www.carlsbadca.gov/conservation for programs, incentives, water rules, and more tips and resources.

Indoor

- Take short showers or fill the bathtub halfway
- Turn water off when brushing teeth or shaving
- Wash only full loads of clothes
- Fix leaks (toilets, faucets, etc.)
- Install high-efficiency fixtures

Outdoor

- Install drip-irrigation
- Adjust sprinklers to reduce water lost from overspray onto impervious surfaces
- Water during cool parts of the day to reduce evaporation
- Install a smart irrigation controller
- Convert to a native landscape
- Repair broken sprinkler heads and/or irrigation lines (do not irrigate until repair is made)

How to contact us

This report covers testing for contaminants in 2021. For questions or concerns regarding the quality of Carlsbad's drinking water, contact CMWD at **442-438-2722** or email water@carlsbadca.gov.

CMWD Board meetings are held in conjunction with the Carlsbad City Council on an as needed basis on Tuesday evenings. Agendas may be obtained at www.carlsbadca.gov or Carlsbad City Hall, 1200 Carlsbad Village Drive. Comments regarding drinking water are always welcome by the CMWD Board of Directors.

This report can be downloaded from www.carlsbadca.gov/water-quality-report.

Carlsbad Municipal Water District

5950 El Camino Real, Carlsbad, CA 92008
Hours: Monday through Friday, 8 a.m. to 5 p.m.
442-438-2722 • water@carlsbadca.gov

Additional sources for water quality information:

San Diego County Water Authority
858-522-6600 • www.sdcwa.org

Metropolitan Water District of Southern California
800-225-5693 • www.mwdh2o.com

State Water Resources Control Board
Division of Drinking Water & Environmental Management
619-525-4159 • www.waterboards.ca.gov

U.S. Environmental Protection Agency
Office of Ground Water & Drinking Water Safe Drinking Water Hotline:
800-426-4791 • www.epa.gov/watersense/state-water-facts



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Powell reservoir on the Colorado river