*Water Quality*

Report 2019

A subsidiary district of the

City of Carlsbad

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

### Water provided by the Carlsbad Municipal Water District meets all 2019 State and Federal drinking water standards. This report provides detailed water quality test results and explains where Carlsbad’s water comes from.

Where our water comes from

The Carlsbad Municipal Water District currently imports all 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 the Carlsbad Municipal Water District to its customers. The Claude “Bud” Lewis Carlsbad Desalination Plant delivers water to 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.

Sources

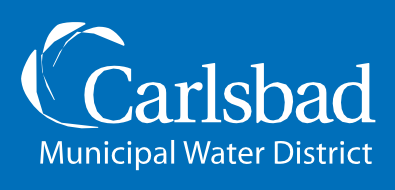
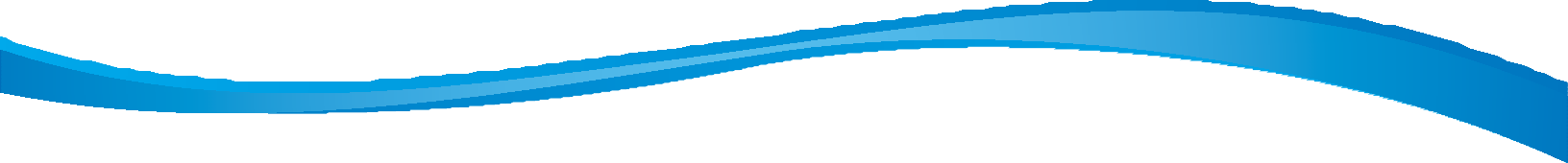
We encourage residents and businesses to continue making water conservation a *way of life*. For more information on water use rules and recommended conservation measures, please visit [**www.carlsbadca.gov/water**](http://www.carlsbadca.gov/water).

Sources of drinking water (both tap water and bottled water) include oceans, rivers, lakes,

streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land

California Aqueduct

or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.



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. Environmental Protection Agency’s Safe Drinking Water Hotline at **800-426-4791**.

Contaminants that might be present in source water include:

* Microbial contaminants, such as viruses and bacteria that can come from sewage 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.
* Carlsbad MWD has sampled all required data including entry points in the distribution system for the fourth Unregulated Contaminant Monitoring Rule (UCMR 4) contaminants in 2019. The analytical results for UCMR 4 are stored in the National Contaminant Occurrence Database (NCOD) <https://www.epa.gov/sdwa/national-contaminant-occurrence-database-ncod> for drinking water.

**2019 Carlsbad Water Quality Analysis**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Units** | **State or Federal MCL [MRDL]** | **PHG (MCLG)**  **[MRDL]** | **State DLR** | **Range Average** | **Skinner Plant Effulent** | **Twin Oaks Plant** | **CMWD**  **System Samples** | **Carlsbad Desal Plant** | **Major Sources in Drinking Water** |
| Percent State Project Water | % | NA | NA | NA | Range | 0-100 | NA | NA | NA |  |
| Average | 62 | NA | NA | NA |  |
| **PRIMARY STANDARDS--Mandatory Health-Related Standards** | | | | | | | | | | |
| **CLARITY** |  |  |  |  |  |  |  |  |  |  |
| Combined Filter | NTU | TT=1 |  |  | Highest | 0.10 | 0.01-0.02 | NA | 1.0 |  |
| Effluent Turbidity(a) | % | TT (a) | NA | NA | % ≤ 0.3 | 95% | 95% | NA | 99.7% | Soil runoff |
| **MICROBIOLOGICAL** | | | | |  |  |  |  |  |  |
| Total Coliform Bacteria (b) | % | 5.0 | MCLG=0 | NA | Range | 0 | ND | NA | ND |  |
| Average | 0 | ND | NA | ND | Naturally present in the environment |
| E. coli (c) | NA | TT | MCLG=0 | NA | Positive sample | 0 | ND | NA | ND | Human and animal fecal waste |
|  |  |  |  |  |
| **INORGANIC CHEMICALS** | | | | |  |  |  |  |  |  |
| Arsenic | ppb | 10 | 0.004 | 2 | Range | ND | 2 | NA | ND- 0.42 | Natural deposits erosion, glass and electronics, production wastes |
| Average | ND | 2 | NA | 0.42 |
| 2016 Copper Samples | ppm | AL = 1.3 | 0.3 | 0.05 | No.>AL | NA | NA | ND | NA | Internal corrosion of household pipes natural deposits erosion |
| 90%ile | NA | NA | ND | NA |
| Fluoride (f) | Control Range | | | | | 0.5 – 0.9 | 0.6-1.2 | NA | 0.7-0.794 |  |
| Optimal Fluoride Level | | | | | 0.7 | 0.7 | NA | 0.750 |
| Treatment-related Fluoride | ppm | 2.0 | 1 | 0.1 | Range | 0.6-0.9 | 0.5-1.1 | NA | NA | Erosion of natural deposits  water additive that promotes strong teeth |
| Average | 0.7 | 0.7 | NA | NA |
| 2016 Lead Samples | ppb | 15 ppb | 0.2 | 5 | No.>AL | NA | NA | 0 | NA | House pipes internal corrosion; erosion of natural deposits |
| 90%ile | NA | NA | 0.0016 | NA |
| Nitrate | ppm | 10 | 10 | 0.4 | Range | ND | 0.3-0.6 | NA | ND | Runoff and leaching from fertilizer use, septic tank and sewage; natural deposits erosion |
| Average | ND | 0.5 | NA | ND |
| **RADIOLOGICALS** | | | | | | | | | | |
| Uranium | pCi/L | 20 | 0.43 | 1 | Range | ND-3 | 2.7-3.1 | NA | ND | Erosion of natural deposits |
| Average | ND | 2.9 | NA | ND |
| **DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS (o)** | | | | | | | | | | |
| Total Trihalomethanes (g) (TTHM) | ppb | 80 | NA | 1.0 | Range | 14-38 | 14-80 | 14.0-32.0 | ND | By-product of drinking water chlorination |
| Highest LRAA | 19 | 39 | 22 | ND |
| (HAA5)  Samples | ppb | 60 | NA | 1.0 | Range | 4.0-8.8 | 3.0-9.0 | 3.1-14.0 | ND | By-product of drinking water chlorination |
| Highest LRAA | 5.4 | 5.0 | 6.0 | ND |
| Total Chlorine Residual | ppm | [4.0] | [4.0] | NA | Range | NA | 0.4-3.7 | 1.99-2.66 | 2.67-3.42 | Drinking water disinfectant added for treatment |
| Highest RAA | NA | 3.2 | 2.3 | 3.14 |
| Bromate (d) | ppb | 10 | 0.1 | 1.0 | Range | ND-12 | 2.0-13 | NA | NA | By-product of drinking water ozonation |
| Highest RAA | 4.1 | 6.0 | NA | NA |
| **SECONDARY STANDARDS--Aesthetic Standards** | | | | | | | | | | |
| Chloride | ppm | 500 | NA | NA | Range | 56-72 | NA | NA | NA | Runoff leaching from natural deposits seawater influence |
| Average | 64 | 59 | NA | NA |
| Color | Units | 15 | NA | NA | Range | 1 | ND | NA | ND | Naturally-occurring organic materials |
| Average | 1 | ND | NA | ND |
| Odor Threshold | TON | 3 | NA | 1 | Range | 3 | NA | NA | ND | Naturally-occurring organic materials |
| Average | 3 | 1 | NA | ND |
| Specific Conductance | µS/cm | 1600 | NA | NA | Range | 455-571 | NA | NA | 304.26-  694.09 | Substances that form ions in water seawater influence |
| Average | 513 | 470 | NA | 430.70 |
| Sulfate | ppm | 500 | NA | 0.5 | Range | 66-81 | NA | NA | NA | Runoff leaching from natural deposits Industrial wastes |
| Average | 74 | 56 | NA | NA |
| Total Dissolved Solids (TDS) | ppm | 1000 | NA | NA | Range | 259-321 | NA | NA | 80-426 | Runoff leaching from natural deposits seawater influence |
| Average | 290 | 280 | NA | 232.7 |
| **OTHER PARAMETERS** | | | | | | | | | | |
| **CHEMICAL** | | | | | | | | | | |
| Alkalinity | ppm | NA | NA | NA | Range | 62-78 | NA | NA | 48-88 |  |
| Sample | 70 | 77 | NA | 59.7 |
| Boron | ppb | NL=1,000 | NA | 100 | Range | 110 | NA | NA | .33-.95 | Runoff leaching from natural deposits, Industrial wastes |
| Average | 110 | 120 | NA | .59 |
| Calcium | ppm | NA | NA | NA | Range | 27-32 | NA | NA | 19.4-43.9 |  |
| Sample | 30 | 26 | NA | 23.9 |
| Chlorate | ppb | NL=800 | NA | 20 | Range | 23 | 180-360 | NA | NA | By-product of drinking water chlorination Industrial processes |
| Range | 23 | 244 | NA | NA |
| Chromium VI (h) | ppb | 10 | 0.02 | 1 | Range | ND | ND | NA | NA | Runoff leaching from natural deposits; discharge from industrial waste factories |
| Average | ND | ND | NA | NA |
| Corrosivity (i)  (as Aggressiveness Index) | AI | NA | NA | NA | Range | 11.8-12.0 | NA | NA | 11.30-12.01 | Elemental balance in water; affected by temperature, other factors |
| Average | 11.9 | 12 | NA | 11.57 |
| Corrosivity (j)  (as Saturation Index) | SI | NA | NA | NA | Range | 0.04-0.25 | NA | NA | 0.02-0.66 | Elemental balance in water affected by temperature & other factors |
| Average | 0.14 | 0.55 | NA | 0.28 |
| Hardness | ppm | NA | NA | NA | Range | 109-129 | NA | NA | 1183-7672 |  |
| Sample | 119 | 110 | NA | 6133 |
| Lead Sampling in (8) schools(k) | ppm | AL=0.015 | 0.2 | 5 | No.>AL | NA | NA | ND-0.0057 | NA | Internal erosion of natural deposits. |
| 90%ile | NA | NA | 0.0012 | NA |
| Magnesium | ppm | NA | NA | NA | Range | 11-13 | NA | NA | 0.483-1.09 |  |
| Sample | 12 | 10 | NA | 0.745 |
| pH | pH | NA | NA | NA | Range | 8.2 | 7.3-8.9 | NA | 7.40-8.93 |  |
| Average | 8.2 | 8.3 | NA | 8.52 |
| Potassium | ppm | NA | NA | NA | Range | 2.8-3.2 | NA | NA | 1.31-4.36 |  |
| Sample | 3.0 | 2.7 | NA | 2.46 |
| Sodium | ppm | NA | NA | NA | Range | 48-56 | NA | NA | 32.7-80.4 |  |
| Sample | 52 | 50 | NA | 52.3 |
| TOC | ppm | TT | NA | 0.30 | Range | 1.9-3.1 | 2.0-3.0 | NA | NA | Various natural and man-made sources |
| N-Nitrosodimethylamine (NDMA) | ppt | NL = 10 | 3 | 2 | Range | ND-3.1 | NA | NA | NA | By-product of drinking water |
| D.Wide | ND | ND | NA | NA |

# How to read this report

As you read the water quality tables in this report, compare the level of contaminants found in Carlsbad Municipal Water District’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 Carlsbad Municipal Water District met all drinking water standards in 2019.

**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.

## 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.

Carlsbad Municipal Water District 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](http://www.epa.gov/safewater/lead). Carlsbad Municipal Water District has complied and meets Lead and Copper standards.

**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 Techniqud** 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.go***](http://www.carlsbadca.gov/)***v/ water-quality-report***

## Footnotes

1. (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.

1. 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. In 2017, 1,560 samples were analyzed with no positive samples. The MCL was not violated.
2. 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.
3. Twin Oaks running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is

4.2 ppb.

1. 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.

1. Skinner and Twin Oaks were in compliance with all provisions of the State’s Fluoridation System Requirements.
2. 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.
3. Chromium VI reporting level is 0.04 ppb, which is below the state DLR of 1 ppb.
4. AI <10.0 = Highly aggressive and very corrosive water. AI >12.0 =

Non-aggressive water. AI (0.14 – 13.0) = Moderately aggressive water.

1. Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate.

Sources *continued*



Colorado River

* 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.
* The San Diego County Water Authority (SDCWA) experienced a Tier 2 violation in a treatment process failure at its regional treatment plant. Water in the treatment plant was not in contact with the proper dosage of ozone disinfectant for the required amount of time. On April 21-22, 2019, a segment of the disinfection treatment facility did not provide the intended disinfection of pathogens. Upon being notified of the malfunction, a review of the overall pathogen removal at the treatment plant was performed. It was determined however, unable to be confirmed, that the required reduction of pathogens was most likely achieved. The SDCWA implemented policy and engineering changes to immediately identify and correct improper valve conditions that led to the incident. SDCWA has prepared new procedures for ensuring that the continuous disinfection treatment facility is operating as designed and as required. Inadequately treated water may contain disease causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Drinking water regulations

To ensure tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board set regulations that limit the amount of certain contaminants in water provided by public water systems. State Water Resources Control Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

*Special note:*

Some people might be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ

How to contact us

This report covers testing for contaminants in 2019. For questions or concerns regarding the quality of Carlsbad’s drinking water, contact the Carlsbad Municipal Water District at **760-438-2722** or email [**water@carlsbadca.gov**](mailto:water@carlsbadca.gov).

To participate in decisions that affect drinking water in the Carlsbad Municipal Water District service area, please watch the Carlsbad Municipal Water District Board of Directors meeting agenda for drinking water items. Carlsbad Municipal Water District 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**](http://www.carlsbadca.gov/) or Carlsbad City Hall, 1200 Carlsbad Village Drive. Comments regarding drinking water are always welcome.

This report can be downloaded from [**www.carlsbadca.gov/water**](http://www.carlsbadca.gov/water)**-quality-report**.

transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to

Some people might be more vulnerable to contaminants in

drinking water than the general population.

Carlsbad Municipal Water District

5950 El Camino Real, Carlsbad, CA 92008 Hours: Monday through Friday, 8 a.m. to 5 p.m. 760-438-2722 **•** [water@carlsbadca.gov](mailto:water@carlsbadca.gov)

Additional sources for water quality information: San Diego County Water Authority

858-522-6600 **•** [www.sdcwa.org](http://www.sdcwa.org/)

lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at **800-426-4791**.



Metropolitan Water District of Southern California 800-CALL-MWD (225-5693)

[www.mwdh2o.com](http://www.mwdh2o.com/)

State Water Resources Control Board Division of Drinking Water & Environmental Management

619-525-4159 **•** [www.waterboardsca.gov](http://www.waterboardsca.gov/)

U.S. Environmental Protection Agency Office of Ground Water & Drinking Water Safe Drinking Water Hotline 800-426-4791 [**www.epa.gov/safewater/hfacts.html**](http://www.epa.gov/safewater/hfacts.html)

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