

Carlsbad Municipal Water District

ANNUAL
WATER QUALITY REPORT
FOR 2002



**IMPORTANT INFORMATION
ON WATER QUALITY, SAFETY AND
CONSERVATION AND STORM
WATER POLLUTION PREVENTION**

www.ci.carlsbad.ca.us/cserv/water.html

Water Quality Is Everybody's Business

Environmental awareness extends from the air we breathe and the food we eat. Citizens across the country have asked to be kept informed about the quality of their water. In response, Congress and the California Legislature have passed laws that require water agencies to provide an annual water quality report to their customers.

This report will give you an overview of how the Carlsbad Municipal Water District provides your tap water and ensures its high quality.

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



Ensuring the Safety of Carlsbad's Water

The Carlsbad Municipal Water District is pleased to provide you with this Consumer Confidence Report on water quality. This report gives you information about the quality of the water we delivered to you in the year 2002. This water was purchased from the Metropolitan Water District of Southern California, which conducted the testing and provided a majority of the data for this report.

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 Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, 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, radioactive material, and can pick up substances resulting from the presence of animal or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may 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.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.



- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the California Department of Health Services (CDHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDHS regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

In addition, we take many steps to ensure your water's quality and safety before it reaches your tap. These include routine water sampling and monitoring, analyzing the results of the sampling and adjusting treatment, flushing pipes through hydrants, and repairing pipes.

Most of the substances listed in this report occur naturally in our environment and in the foods we eat. Their standards have safety margins that take into account contaminant exposures from other sources, such as food and air. For this reason, these standards should not be regarded as fine lines between safe and dangerous concentrations.

This report covers testing for contaminants in 2002. If you have any questions, please contact Jim Ball of the Carlsbad Municipal Water District at (760) 438-2722.

Special Note:

Some people may 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 transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Where Your Water Comes From

CMWD imports 100% of its water supply, since we have no local sources of water. This supply is treated by and purchased from the Metropolitan Water District of Southern California (MWD) via our wholesaler, the San Diego County Water Authority (SDCWA).

MWD receives water from two sources: the Colorado River through the Colorado River Aqueduct, and Northern California through the California Aqueduct (also known as the State Water Project). These waters are blended and rigorously treated at MWD's Lake Skinner Treatment Plant in southern Riverside County. The water is then delivered to Carlsbad through the San Diego Aqueduct, owned by SDCWA.

In 2002, an average of 73% of our water came from the Colorado River, with the remaining 27% coming from Northern California.

The water quality data contained in this report is obtained from MWD based on their sampling of waters combined at the Lake Skinner Plants.



In December 2002, the Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered

to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

How to Read This Report

As you read the water quality tables in this report, compare the level of constituents found in CMWD's water in the "Combined Skinner Plant Effluents" column with the standards set for them in the MCL and PHG columns. You'll see that CMWD's water did not violate any drinking water standards in 2002.

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

Public Health Goals (PHGs) reflect 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 Contaminant Level Goals (MCLGs) reflect the same levels as PHGs, but are set by the U.S. Environmental Protection Agency.

Maximum Contaminant Levels (MCLs) reflect the highest level of a contaminant that is allowed in drinking water. MCLs are divided into two categories: primary and secondary.

Maximum Residual Disinfectant Levels (MRDLs) reflect the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goals (MRDLGs) reflect the level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. Environmental Protection Agency.



CARLSBAD MUNICIPAL WATER DISTRICT WATER QUALITY DATA FOR 2002

PARAMETER	UNIT OF MEASURE	STATE MCL [MRDL]	PHG (MCLG) [MRDLG]	STATE DLR	RANGE AVERAGE	COMBINED SKINNER PLANT EFFLUENTS	MAJOR SOURCES IN DRINKING WATER
PRIMARY STANDARDS – Mandatory Health-Related Standards							
CLARITY							
Combined Filter Effluent Turbidity	NTU %	0.3 95 (a)	NA	–	Highest % < 0.3	0.11 100	Soil runoff
MICROBIOLOGICAL							
Total Coliform Bacteria	%	5.0 (b)	(0)	–	Range Average	0 - 0.12% 0.02%	Naturally present in the environment
Fecal Coliform and E. coli	(c)	(c)	(0)	–	% of fecal coliform & E. coli samples that were positive = 0		Human and animal fecal waste
Methyl-tert-butyl-ether (MTBE) (f,g)	ppb	13	13	3	Range Average	ND - 1.4 0.6	Leaking underground gasoline storage tanks and pipelines
INORGANIC CHEMICALS							
Fluoride	ppm	2	1	0.1	Range Average	0.19 - 0.26 0.24	Erosion of natural deposits; water additive for tooth health
RADIOLOGICALS (i)							
Gross Alpha Particle Activity	pCi/L	15	NA	1	Range Average	ND - 5.53 3.99	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	NA	4	Range Average	ND - 7.48 5.24	Decay of natural and manmade deposits
Combined Radium (j)	pCi/L	5	NA	0.5	Range Average	ND - 2.36 1.01	Erosion of natural deposits
Uranium	pCi/L	20	0.5	2	Range Average	ND - 3.18 2.61	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS AND DISINFECTION BY-PRODUCTS PRECURSORS							
Total Trihalomethanes (TTHM) (k)	ppb	80	NA	0.5	Range Average	37 - 58 49	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (k,l)	ppb	60	NA	1 (l)	Range Average	14 - 29 20	By-product of drinking water chlorination
Total Chlorine Residual	ppm	[4]	[4]	–	Range Average	2.35 - 2.46 2.40	Drinking water disinfectant added for treatment
SECONDARY STANDARDS – Aesthetic Standards							
Chloride	ppm	500	NA	–	Range Average	78 - 92 83	Runoff & leaching from natural deposits; seawater influence
Color	units	15	NA	–	Range Average	1 - 3 2	Naturally occurring organic materials
Corrosivity	SI	non-corrosive	NA	–	Range Average	0.25 - 0.42 0.33	Elemental balance in water; affected by temperature & other factors
Methyl-tert-butyl-ether (MTBE) (f,g)	ppb	13	13	3	Range Average	ND - 1.4 0.6	Leaking underground gasoline storage tanks and pipelines.
Odor Threshold (m)	units	3	NA	–	Range Average	(m) (m)	Naturally occurring organic materials
Specific Conductance	µmho/cm	1600	NA	–	Range Average	830 - 902 852	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	162 - 191 179	Runoff & leaching from natural deposits; seawater influence
Total Dissolved Solids	ppm	1000	NA	–	Range Average	495 - 543 509	Runoff & leaching from natural deposits; seawater influence
Turbidity (monthly)	NTU	5	NA	–	Range Average	0.05 - 0.08 0.06	Soil runoff
ADDITIONAL SAMPLING – CMWD DISTRIBUTION SYSTEM							
Coliform Bacteria	%	5.0 (b)	(0)	–	% of coliform bacteria samples that were positive = 0		Naturally present in the environment
Total Trihalomethanes	ppb	100	NA	0.5	Range Average	43.0 - 64.0 53.8	By-product of drinking water chlorination
UNREGULATED CHEMICALS REQUIRING MONITORING							
Boron	ppb	NA	AL = 1000	100	Range Average	110 - 140 130	Runoff & leaching from natural deposits; industrial wastes
Perchlorate	ppb	NA	AL = 4	4	Range Average	ND - 5 ND	Industrial waste discharge
ADDITIONAL PARAMETERS – ICR Disinfection By-Products (Data is from 8/97 to 12/98)							
Chloral hydrate	ppb	NA	NA	0.5	Range Average	3.5 - 7.0 5.1	By-product of drinking water chlorination
Cyanogen chloride	ppb	NA	NA	0.5	Range Average	2.3 - 5.5 3.4	By-product of drinking water chlorination
Haloacetonitriles	ppb	NA	NA	0.5	Range Average	5.6 - 17 8.7	By-product of drinking water chlorination
Haloketones	ppb	NA	NA	0.5	Range Average	1.3 - 2.2 1.6	By-product of drinking water chlorination
Total organic halides	ppb	NA	NA	50	Range Average	115 - 157 138	By-product of drinking water chlorination

Notes

PARAMETER	UNIT OF MEASURE	STATE MCL [MRDL]	RANGE AVERAGE	COMBINED SKINNER PLANT EFFLUENTS
Other Parameters (there are no PHGs or State DLRs for these parameters)				
Alkalinity	ppm	NA	Range Average	114 - 123 119
Calcium	ppm	NA	Range Average	54 - 59 57
Hardness	ppm	NA	Range Average	230 - 250 241
Magnesium	ppm	NA	Range Average	23.0 - 25.0 24.0
pH	pH units	NA	Range Average	8.02 - 8.08 8.06
Potassium	ppm	NA	Range Average	3.9 - 4.1 3.9
Sodium	ppm	NA	Range Average	76 - 86 79
Total Organic Carbon (n) (TOCs)	ppm	TT	Range Average	2.1 - 2.8 2.4

These water quality tables list all of the regulated drinking water contaminants that were detected during the calendar year 2002. The presence of contaminants in water does not necessarily indicate that the water poses a health risk.

Unless otherwise noted, the data presented in this table is from testing done in 2002. The U.S. Environmental Protection Agency and the California Department of Health Services require that monitoring for certain contaminants be less than once per year because the concentrations of these contaminants do not change frequently.

Abbreviations

AL	California Action Level
CFU/mL	Colony Forming Units per milliliter
DBP	Disinfection By-Products
DLR	Detection Limits for the purpose of Reporting
HAA5	Haloacetic Acids (five)
ICR	Information Collection Rule
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MPN	Most Probable Number
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
NA	Not Applicable
ND	None Detected
NTU	Nephelometric Turbidity Units
pCi/L	picoCuries per liter
PHG	Public Health Goal
ppb	parts per billion or micrograms per liter ($\mu\text{g/L}$)
ppm	parts per million or milligrams per liter (mg/L)
SI	Saturation Index (Langelier)
TT	Treatment Technique
TTHM	Total Trihalomethanes
$\mu\text{mho/cm}$	micromhos per centimeter

- (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 1.0 NTU at any time. Turbidity is a measure of the cloudiness of the water and is a good indicator of water quality and filtration performance. The monthly average and range of turbidity are listed in the Secondary Standards section.
- (b) Total coliform MCLs: No more than 5.0% of monthly samples may be total coliform positive. Compliance is based on the combined distribution system sampling from all of the filtration plants in the Metropolitan Water District system. In 2002, 11,119 samples were analyzed. The MCL was not violated.
- (c) Fecal coliform/E. coli MCLs: The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. The MCL was not violated in 2002.
- (d) Not used.
- (e) Not used.
- (f) Aluminum, copper, MTBE and thiobencarb have both primary and secondary standards.
- (g) MTBE reporting level is 0.5 ppb.
- (h) Not used.
- (i) Results are for the 1998/99 4-quarter radiological monitoring program.
- (j) Standard is for Radium-226 and -228 combined.
- (k) Calculated from the filtration plant effluent samples taken weekly for TTHM and monthly for HAA5. In 2002, Metropolitan was in compliance with all provisions of the Stage 1 Disinfection/Disinfection By-Products (D/DBP) Rule. Of the more than 40 quarterly distribution samples collected, the 2002 running annual average for TTHM was 53 ppb and 21 ppb for HAA5. Metropolitan was also in compliance with the DBP precursor control portion of the Stage 1 regulation.
- (l) DLR = 1.0 ppb for each HAA5 analyte (dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid), except for monochloroacetic acid which has a DLR = 2.0 ppb.
- (m) Metropolitan has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information, contact MWD at (213) 217-6850.
- (n) TOCs at the filtration plants were taken at the filter effluents.

Be Part of the Pollution Solution!

Did you know that storm drains are not connected to sanitary sewer systems and treatment plants? The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Untreated storm water and the pollutants it carries flow directly to creeks, lagoons and the ocean.

Storm water pollution comes from a variety of sources including oil, fuel and fluids from vehicles and heavy equipment, lawn clippings, pesticide and fertilizer runoff from landscaping, concrete and sediment from construction and landscaping activities, bacteria from human and animal waste, and litter.

The City of Carlsbad is committed to improving water quality and reducing the amount of pollutants that enter our precious waterways.

Why do we need a clean environment?

Having a clean environment is of primary importance to our health and economy. Clean waterways provide commercial opportunities, recreation, fish habitat and add beauty to our landscape. All of us benefit from clean water and all of us have a role in making and keeping our creeks, lagoons and ocean clean.



Who is responsible for protecting storm water? **EVERYONE!**

Storm water pollution prevention is a shared duty between the City of Carlsbad and the community. The City's responsibility is to monitor and clean storm drains on public streets, property or easements. The community's role is to keep our storm drains free of trash, debris, excessive vegetation and other materials that may pollute, contaminate or block the flow of water through the storm drain system.

What can you do to help keep our creeks, lagoons and ocean clean?

- **Sweep or Rake.** Sweep up debris and put it in a trash can. Do not use a hose to wash off sidewalks, parking areas and garages. Rake up yard waste and start a compost pile.
- **Dispose of Yard Waste More Frequently.** By disposing of grass, leaves, shrubs and other organic matter more frequently, less will wash into storm drains.
- **Reduce Use of Landscape Chemicals.** Decrease the use of lawn and garden care products such as pesticides, insecticides, weed killers, fertilizers, herbicides and other chemicals. Avoid over-irrigation which washes chemicals into the gutter and storm drains.
- **Use Soap Sparingly.** When washing your car at home, use soap sparingly, divert wash water to landscaped areas and pour your bucket of soapy water down the sink. Never wash your car in the street.
- **Clean Up After Your Pets.** Take a bag when you walk your pets and be sure to always clean up after them. Flush pet waste down the toilet or dispose of it in a sealed plastic bag and throw it in the trash.
- **Buy Non-Toxic Products.** When possible, use non-toxic products in household cleaning. If you must use a toxic cleaning product, buy small quantities, use it sparingly and properly dispose of unused portions. For the household hazardous waste collection facility nearest you, call (800) CLEANUP.

To view brochures, documents and links to other storm water websites, visit the City of Carlsbad's website at www.ci.carlsbad.ca.us/cservlet/storm.html.

To report illegal storm drain discharges, please call the Storm Water Hotline at (760) 602-2779.

A Reminder to Conserve

The Carlsbad Water Ethic promotes responsible and efficient water use in our arid city. The following practices are to be followed even when we are not in a drought situation. It is hoped that Carlsbad residents will adopt these behaviors as a way of life:

- New landscaping shall incorporate drought-tolerant plant materials and micro-irrigation (drip) systems wherever possible.
- Water can never leave the user's property due to over-irrigation of landscape.
- Watering must be done during the early morning or evening hours to minimize evaporation (between 4:00 p.m. and 9:00 a.m. the following morning).
- All leaks must be investigated and repaired.
- Water cannot be used to clean paved surfaces, such as sidewalks, driveways, parking areas, etc., except to alleviate immediate safety or sanitation hazards.
- Reclaimed or recycled water shall be used wherever and whenever possible.

For more information on conservation programs, call (760) 438-2722.



Where Can I Get More Information?

If you have questions or concerns regarding the quality of Carlsbad's water, contact Jim Ball at (760) 438-2722 or by email at jball@ci.carlsbad.ca.us. For more detailed information on testing procedures, results and source water assessments, contact the Metropolitan Water District of Southern California's Water Quality Division at (800) CALL MWD.

To participate in decisions that affect drinking water in the CMWD service area, please watch the Carlsbad City Council agenda for drinking water items. Agendas can be obtained at Carlsbad City Hall, 1200 Carlsbad Village Drive, or on the Internet at www.ci.carlsbad.ca.us. The City Council meets every Tuesday at 6:00 p.m. at City Hall. Comments regarding your drinking water are always welcome.



This report is mailed to all water customers at their billing address and is available at most City facilities. This report may be photocopied and distributed or posted in a prominent place at your facility. Additional copies are available on the Internet at www.ci.carlsbad.ca.us/csenv/water.html or by calling the Carlsbad Municipal Water District at (760) 438-2722.

The Carlsbad Municipal Water District is located at 5950 El Camino Real. Our office hours are Monday through Friday 8:00 a.m. to 5:00 p.m.

Here are a few more sources for water quality information:

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

Metropolitan Water District of Southern California
(800) CALL-MWD (225-5693)
www.mwd.dst.ca.us

California Department of Health Services - Division of Drinking Water & Environmental Management
(619) 525-4159
www.dhs.ca.gov/ps/ddwem

U.S. Environmental Protection Agency
Office of Ground Water & Drinking Water
(800) 426-4791 - Safe Drinking Water Hotline
www.epa.gov/safewater/dwhealth.html
www.epa.gov/safewater/faq/faq.html