The City of SAN DIEGO

2018 Annual Drinking Water Quality Report

Quality

Value

Reliability

Customer Service

SD Public Utilities

City of San Diego's Tap Water Supply Meets all State and Federal Health Standards in 2018

The City of San Diego is committed to providing you with a clean, safe and stable water supply.

It's the priority of every employee of the City's Public Utilities Department. Those efforts matter.

Based on the water quality monitoring data collected in 2018, the City's tap water met all state and federal drinking water health standards, which are the primary standards for treating and monitoring water.

The U.S. Environmental Protection Agency (EPA) and the California Division of Drinking Water mandate all water agencies to produce an annual document educating customers about their drinking water quality for the previous year.

This annual Drinking Water Quality Report details the origin of the City's water supply, what it contains and how it meets health standards.

A Message from the Director

On behalf of the 1,600 team members in the City of San Diego's Public Utilities Department, I am pleased to deliver the 2018 Drinking Water Quality Report.

As the water supplier to 1.4 million customers, it is our job to provide you with safe and reliable drinking water. We are proud that the 300,000 tests we conduct annually demonstrate that our water meets all regulatory quality standards.

I have been exceptionally honored to lead the dedicated Public Utilities team over the last year. In this time, we have made considerable progress improving our operations with a renewed focus on you, our customer. We are excited about our ongoing efforts that will further benefit you by providing greater local water reliability and increasing the information available about your water usage.

You'll learn more about these topics and others in this report. Thank you for trusting us to provide you with your drinking water.

If you have questions or need assistance from the Public Utilities Department, please reach out. We're here to help.

Sincerely,

Matthew Vespi
Interim Director
Public Utilities Department

How Can I Get More Involved?

Public Utilities Department matters are often discussed at San Diego City Council meetings. Meetings are held Monday and Tuesday of most weeks. The meetings can also be viewed on CityTV - Channel 24 on Cox Communications and Spectrum, or Channel 99 on AT&T. CityTV also streams council meetings online at **sandiego.gov**. For meeting location, date, time and items involving the Public Utilities Department, visit **sandiego.gov/city-clerk/officialdocs/legisdocs/dockets** for the current Council agenda.

CONTACT

Public Utilities Emergency Hotline	619-515-3525
General and Billing Information	619-515-3500
	customercare@sandiego.gov
Water Quality Lab	619-668-3232
	drinkingwaterquality@sandiego.gov
Capital Improvements Projects	619-533-4207
City Lakes Recreation	619-465-3474
Pure Water Speakers Bureau	619-533-6638
Storm Water Pollution Prevention	619-235-1000
Water Waste/Recycled Water	619-533-5271
	waterwaste@sandiego.gov

VISIT

City of San Diego Public Utilities	sandiego.gov/publicutilities
San Diego County Water Authority	sdcwa.org
Metropolitan Water District	mwdh2o.com
CA Division of Drinking Water	waterboards.ca.gov
Think Blue	thinkblue.org
U.S. EPA	water.epa.gov/drink
American Water Works Association	awwa.org
Be Water Wise	bewaterwise.com
Pure Water Program	purewatersd.org

ENGAGE

sandiego.gov

facebook.com/CityofSanDiego

youtube.com/TheCityofSanDiego

instagram.com/thecityofsandiego

Get It Done App
sandiego.gov/get-it-done

@cityofsandiego

An adequate and reliable water supply is vital for the future of San Diego. The Public Utilities Department actively pursues ways to increase our water supplies and our options.

Water Supply

WHAT'S IN MY WATER BEFORE IT'S TREATED?

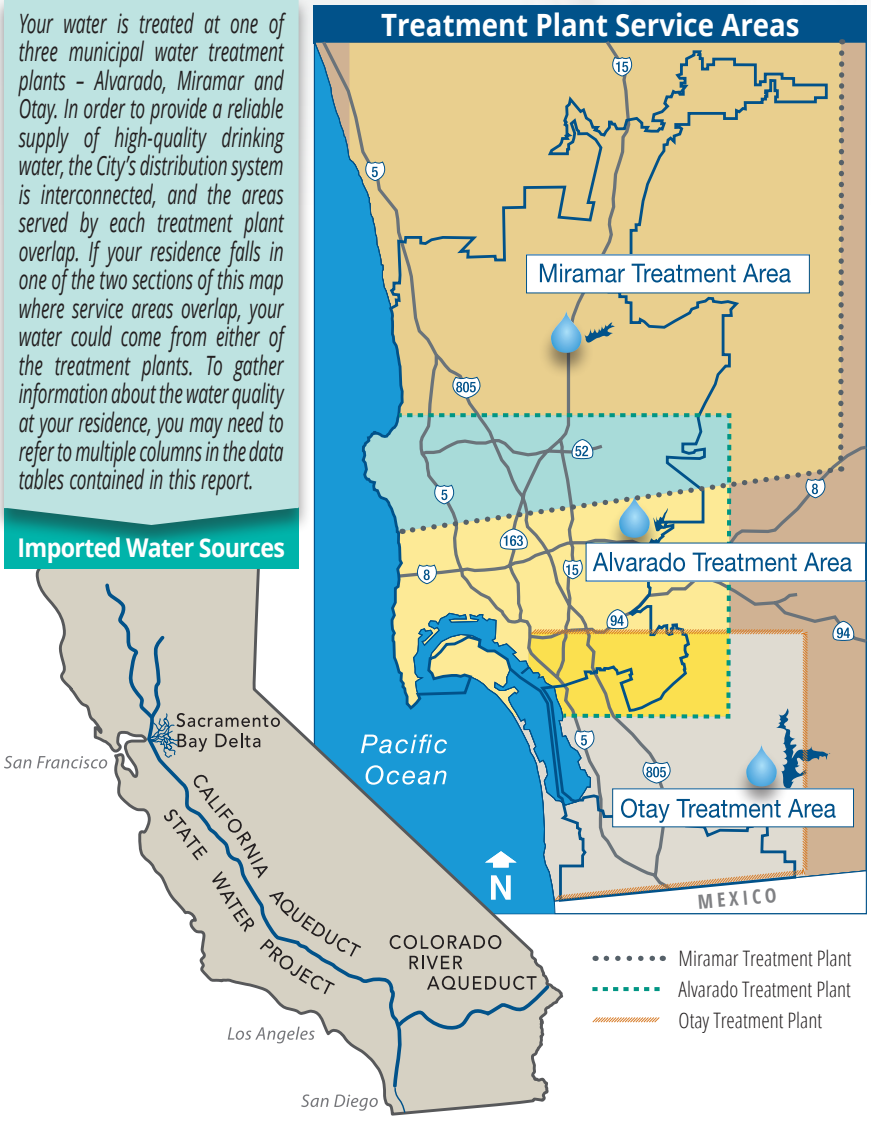
The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs and wells.

The sources of drinking 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 animals or from 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** that 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 byproducts of industrial processes and petroleum production and can also come from gas stations, urban storm water 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.

In order to ensure tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Your water is treated at one of three municipal water treatment plants - Alvarado, Miramar and Otay. In order to provide a reliable supply of high-quality drinking water, the City's distribution system is interconnected, and the areas served by each treatment plant overlap. If your residence falls in one of the two sections of this map where service areas overlap, your water could come from either of the treatment plants. To gather information about the water quality at your residence, you may need to refer to multiple columns in the data tables contained in this report.



Imported Water Supply and the Impact on Water Quality

The City of San Diego currently imports the majority of its water supply, the bulk of which is raw water purchased from the San Diego County Water Authority. All raw water is treated before entering the City's drinking water distribution system. Less than 10 percent of the imported water purchased from the Water Authority is a blend of treated water from the Metropolitan Water District Skinner Water Treatment Plant, the Water Authority's Twin Oaks Valley Water Treatment Plant and the Carlsbad Desalination Plant.

The majority of imported water from the Water Authority is a blend from the Colorado River and State Water Project (see map to the left). Throughout the year, the ratio of water from each source changes. Several forces potentially impact the quality of water from the Colorado River and State Water Project. The Colorado River winds through thousands of miles of unprotected watershed containing towns, farms, old mining sites and industrial sites. Water from the State Water Project is subject to potential contaminants such as pesticides and herbicides. This water source also has a higher organic carbon and bromide level than the Colorado River water. As organic carbon and bromide levels increase, the potential for creating higher levels of disinfection byproducts exists. The City continually alters its treatment process to adjust for changing water supplies.

The City of San Diego currently imports the majority of its water supply, the bulk of which is raw water purchased from the San Diego County Water Authority.

The Public Utilities Department has records showing when your water line was installed and can provide a map showing where your service line connects to the City's water main. You can contact the Public Utilities Geographic Information Systems (GIS) Section at 619-527-7482.

Sampling the City's Reservoirs

What are commonly referred to as the San Diego City lakes are actually reservoirs that are part of the City's municipal water supply system. Combined, they have a total storage capacity of 566,238 acre-feet.

The City has offered public recreational use of its reservoirs since 1913.

The public is provided supervised recreational access to all nine of the City's reservoirs for a variety of traditional outdoor activities including fishing, boating, waterfowl hunting and more. Six of the reservoirs are featured below. For more details about all City reservoirs including permitted recreational activities and holiday schedules visit sandiego.gov/reservoirs-lakes.

MURRAY RESERVOIR

5540 Kiowa Drive, La Mesa, CA 91942

Access: Sunrise to sunset

About: The City of San Diego purchased the reservoir from Helix Water District in 1960.

Fun Fact: The reservoir was named in 1924 after James A. Murray, an investor in a local water company.

SAN VICENTE RESERVOIR

12387 Moreno Ave., Lakeside, CA 92040

Access: Closed Tuesday and Wednesday

About: San Vicente Dam was originally built in the 1940s. The dam was raised in Spring 2014 and the reservoir was reopened by the Mayor in 2016. San Vicente is approximately 25 miles northeast of San Diego.

Fun Fact: Largest of the City's reservoirs

HODGES RESERVOIR

20175 Lake Drive, Escondido, CA 92029

Access: Sunrise to sunset

About: Hodges Reservoir was created with the building of Hodges Dam on San Dieguito Creek in 1918. The City of San Diego purchased the dam and reservoir in 1925.

Fun Fact: Known for crappie and great bass fishing

UPPER OTAY RESERVOIR

12161 Otay Lakes Road, Chula Vista, CA 91915

Access: The gates to Upper Otay Reservoir are open on a seasonal schedule from February through October (weather permitting). Pedestrian access is allowed for fishing from sunrise to sunset on Wednesday, Saturday and Sunday on a year-round basis.

About: Established in 1959 as a hatchery for the introduction of Florida-strain largemouth bass.

Fun Fact: Smallest of the City's reservoirs

EL CAPITAN RESERVOIR

16850 El Monte Road, Lakeside, CA 92040

Access: Half hour before sunrise to sunset

About: The El Capitan Reservoir was created in 1935 with the completion of the El Capitan Dam. That same year the reservoir was connected to the City's water system via the El Capitan Pipeline.

Fun Fact: El Capitan had the largest capacity in the City reservoir system until the San Vicente Dam Raise Project was completed in 2014.

MIRAMAR RESERVOIR

10710 Scripps Lake Drive, San Diego, CA 92131

Access: Sunrise to sunset

About: The reservoir was completed in 1960 as part of the second San Diego Aqueduct project.

Fun Fact: The reservoir is adjacent to the City's Miramar Water Treatment Plant, which serves the northern part of the City.

"I love coming to work knowing I get to go out on a boat at one of our nine reservoirs to perform various water quality testing. I'm at the front end of a long process that ensures residents of the City of San Diego are provided clean drinking water."

Jason Edwards - Biologist II
19-year employee, City of San Diego

Recycled water gives San Diego a dependable, year-round and locally controlled water resource. The City of San Diego water reclamation plants treat wastewater to a level that is approved for irrigation, manufacturing and other nondrinking or nonpotable purposes.

	Output	Location
Phase 1	30 mgd by 2023	North City
Phases 2&3	Additional 53 mgd by 2035	Central Area South Bay (as needed)

Total: 83 million gallons per day (mgd)

A Taste of the Future

Pure Water San Diego is a phased, multi-year program that will use water purification technology to clean recycled water to produce a safe, reliable and sustainable water supply. The Pure Water Program will provide one-third of the City of San Diego's water supply by 2035.

Phase 1 – North City Projects Underway

Phase 1 of the Pure Water Program is comprised of several projects that will produce 30 million gallons per day of purified water by 2023, reducing the City's dependence on imported water and increasing reliability of our supply. New facilities including pump stations and pipelines are being constructed to transport and treat wastewater into purified water for distribution to the public.

In June 2018, the Public Utilities Department formed four community-specific working groups to collect input on how to avoid or minimize construction impacts. That feedback is reflected in our construction contracts. The Pure Water team will keep community members engaged and informed throughout construction.

In 2019, City leaders broke ground at the site of the future North City Pure Water Facility to kick off construction of the Pure Water project. Construction on Phase 1 will be completed in 2023.

Pure Water

- 50,000+ proven lab tests
- 30 million gallons per day of purified water by 2023
- One-third of San Diego's water supply by 2035

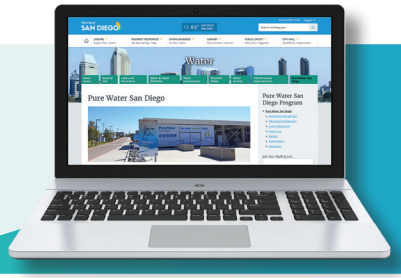
Community Outreach

- 1,000+ facility tours
- 620+ community presentations
- 18 community working group meetings

North City Pure Water Facility Draft Rendering

Want to Learn More?

Visit **purewatersd.org** for more information and to sign up for updates or a free tour of the Pure Water Demonstration Facility.



The City of San Diego has won numerous awards and recognition from agencies and organizations throughout the United States for its far-reaching Pure Water education program and its contributions to the water industry. To find out more go to: sandiego.gov/public-utilities/sustainability/pure-water-sd/awards

Smart Meters Give You More Power Over Your Water Use

"I take a lot of pride and I like interacting with the ratepayers. I can help make the City look good, one ratepayer at a time. Every interaction ends with a handshake and a smile; they're happy, I'm happy. "

Matthew R. Hutchinson
Long-Range Planning, Field Representative
Two-year employee, City of San Diego

As part of our commitment to customer service, the installation of smart water meters is ramping up. Starting this summer, smart meters – or Advanced Meter Infrastructure (AMI) – will be installed for more water customers, giving you more data about your water use and more control over their bills.

Smart water meters have two critical components: the meter itself and a device – an encoder receiver transmitter (ERT) – that wirelessly transmits usage data to the City, which is then available to customers online and via a mobile application.

Once the smart meters are installed and connected to the Public Utilities Department's system, meter reads are sent wirelessly on an hourly basis. Customers can access that data from the City's online portal sandiego.gov/customercare or through the MyWaterSD app which is available through both Apple and Android platforms.

This allows you to:

- Receive online daily water usage information
- Set water usage goals and receive automatic notifications
- Receive alerts for unusual water consumption patterns
- Conserve water and manage your water bill

The City will provide customers with advance notice on when the installation of smart meters in their area is scheduled and completed. In the meantime, customers are encouraged to reach out to the Public Utilities Department to discuss their bills and can also request a free water usage audit at any time.

Smart meters, like the one above, give water customers more control over their water bills. They use radio waves to transmit data to the Public Utilities Department, eliminating manual meter reads.

Answers to Frequently Asked Questions from Our Customers

The Public Utilities Department is here to help answer any questions and concerns you may have about your water. Here are answers to some frequently asked questions.

How do you test our water quality?

The City of San Diego Water Quality Laboratory is committed to the protection of public health in delivering clean, fresh, safe drinking water throughout the year. Over 200 parameters are tested to assess for potential contaminants in source waters and treated drinking water. A listing of contaminants that were analyzed, but not detected, is available on our website at sandiego.gov/public-utilities/water-quality/water-quality-reports.

Is fluoride added to San Diego's water?

Yes. California State law requires that water utilities supplement naturally-occurring fluoride to improve oral health. The levels of fluoride in San Diego's source waters average roughly 0.3 to 0.4 milligrams per liter (mg/L), with some variation due to changes in source waters. This fluoride is supplemented during our treatment process to reach approximately 0.7 mg/L, which is the optimal fluoride level as established by the California Division of Drinking Water.

What causes temporary discolored water?

Discolored yellow or brown tap water commonly occurs in water systems throughout the country. Discoloration is typically caused by changes in flow in the water system due to maintenance or repairs, and these changes in flow stir up naturally-occurring sediments containing iron. Despite its appearance, a temporary color change does not indicate that the water is unsafe or that the integrity of the water system has been compromised.

Chloramine, the disinfectant we use to prevent bacteria from growing in our drinking water, is monitored throughout the City to ensure the water remains safe for household uses including cooking and drinking. While the water is still safe, it's a good idea to refrain from doing laundry until the appearance of the water returns to normal.

Discoloration of drinking water is temporary and typically clears up within 30 minutes to six hours.

Who can I talk to if I have questions about my drinking water quality?

Please call our City of San Diego Water Quality Laboratory's information line at 619-668-3232. You can also email us using drinkingwaterquality@sandiego.gov. The laboratory is open during normal business hours and prides itself on responding quickly to customers.

Who can address my other water concerns?

To report a water leak, sewer spill or pressure problem, call 619-515-3525. For billing questions and concerns, please contact our customer service team at 619-515-3500 or customercare@sandiego.gov. For additional information, visit our website at sandiego.gov/public-utilities/customer-service.

The Advanced Metering Infrastructure (AMI) smart water meters are tested by the manufacturers and comply with the American Water Works Association standards. If you are concerned about the accuracy of your meter or bill, please call us at 619-515-3500. We welcome the chance to help.

How Do We Make Water Drinkable?

WATER TREATMENT

The City's Public Utilities Department provides high-quality drinking water by utilizing proven technology, upgraded facilities and state-certified operators. Water is treated using several processes, with each process providing additional water quality improvements. Using several treatment processes provides multiple barriers for added levels of safety.

Our treatment plants employ a combination of time-tested conventional water treatment processes and innovative disinfection strategies. Conventional water treatment consists of coagulation, flocculation, sedimentation and sand/multimedia filtration. This cost-effective, proven method of treatment is used throughout the modern world.

Our treatment plants employ a combination of time-tested conventional water treatment processes and innovative disinfection strategies.

THE WATER TREATMENT PROCESSES WE USE ARE:

Watershed protection: Protecting the watersheds prevents contamination of our water supply and is the most cost effective process in water treatment. Extensive measures are being taken to prevent contamination of our local and imported water. If you see "No Swimming" or "No Dumping" signs posted near water supplies, this is for the protection of your drinking water. The 2015 Watershed Sanitary Survey, which contains information on the City's watersheds, is available at: **sandiego.gov/water/quality/environment/sanitarysurvey.**

Coagulation: This is the chemical process of rapidly mixing coagulants into the water entering the water treatment plant. Many of the particles in the source water have negative charges causing them to repel each other, much like two magnets when the negative ends are put together. Coagulation changes these negative charges to neutral.

Flocculation: Coagulated water is slowly mixed causing the neutral particles to collide. When the collisions occur the particles clump together forming floc. As the floc is formed, particles in the water are trapped within the floc. The floc now looks like snowflakes suspended in the water.

Sedimentation: The floc particles are heavier than water. Mixing is stopped and the water is allowed to slowly flow through the sedimentation basins. The floc settles to the bottom and is removed. The clear water is collected from the top of the sedimentation basins.

Disinfection, Primary: Drinking water is further treated to remove or inactivate viruses, bacteria and other pathogenic organisms. Disinfection is accomplished in a variety of methods. The Alvarado and Miramar water treatment plants use ozone as the primary disinfectant. The Otay Water Treatment Plant uses chlorine dioxide as the primary disinfectant. These are advanced disinfection processes and have the advantage of providing higher quality water with better taste.

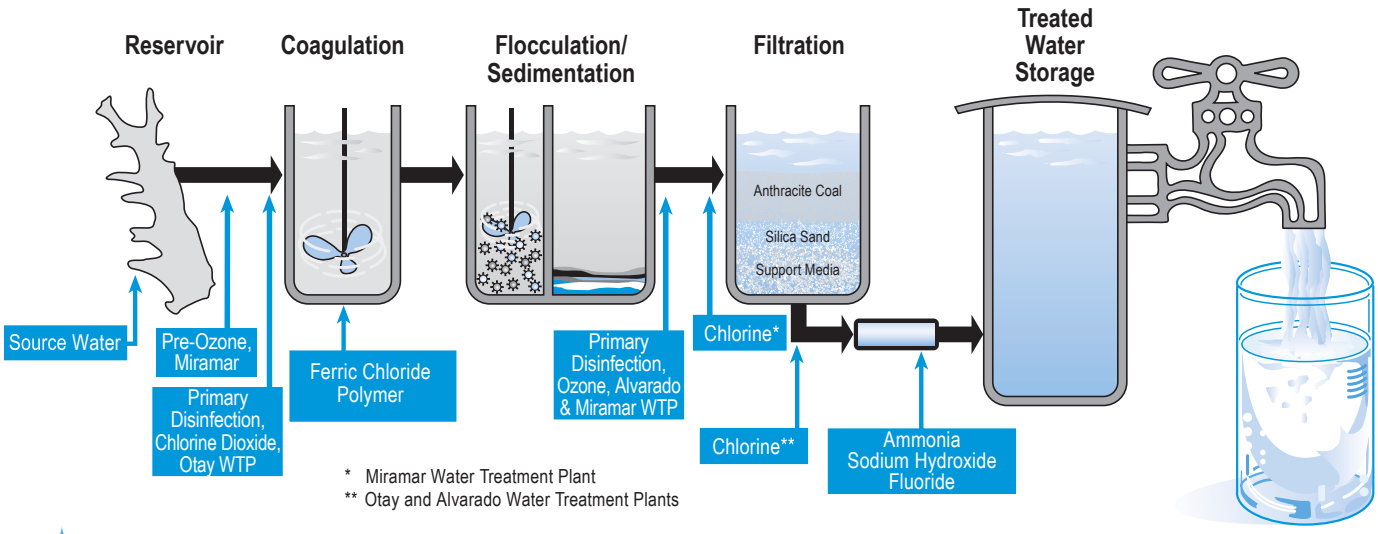
Filtration: Water is passed through deep filtration beds to produce water that is crystal clear. Extremely small particles are removed during this process. San Diego's water treatment plants produce water with turbidity (cloudiness) significantly better than drinking water standards.

Disinfection, Secondary: Chloramines are created by adding chlorine and ammonia to the water. Chloramines help prevent microbial contamination from occurring in the water distribution system.

Corrosion Control: The corrosivity of the water is controlled by adjusting the pH.

"I'm making a difference since I'm testing the water to make sure it's safe to drink."

Jeryl Chica
Assistant Chemist
One-year employee, City of San Diego



Extensive sampling is performed under the U.S. Environmental Protection Agency's Lead and Copper Rule to confirm our water supply is noncorrosive. Analyses continue to demonstrate that our water meets all federal standards. Taken together, sampling results show San Diego's water to be of high quality.

A CHANGE FOR THE BETTER...

Did you know that San Diego's storm water system is separate from its water or wastewater system? Many people think that when water flows into a storm drain it is treated, but the storm drain system and the sewer system are not connected. Everything that enters storm drains flows untreated directly into our creeks, rivers, bays, beaches and ultimately the ocean.

That's why Think Blue, the City of San Diego's storm water outreach and education program, wants you to know that you have the power to keep trash, debris, sediments, metals, pesticides and other pollutants out of our storm drains and waterways by taking a few easy steps.

How You Can Help

Sweep Up Around Your Yard: Sweep up dirt, debris and yard waste and dispose of it properly. Yard waste has the potential to carry hazardous landscaping chemicals such as pesticides and fertilizers into the storm drain system and generate large amounts of bacteria if left to decompose in gutters, drains and local waterways.

Eliminate Over-Irrigation: Prevent water from leaving your property so it won't carry pollutants into our storm drains during dry weather. Sweep hard surfaces instead of hosing them off with water, adjust and maintain sprinklers so they don't spray onto your driveway or sidewalk and fix leaks promptly.

When It Rains: During the rainy season, redirect rain gutter downspouts to landscaped areas where the water can be absorbed and replenish groundwater or connect your downspout to a rain barrel to store the water for later use.

From Your Car: Your car can be a source of automotive pollutants such as motor oil. It's important to check your car regularly for fluid leaks.

Our Storm Water System

From Curb to Ocean: The City of San Diego oversees the operation and maintenance of 48,000 storm drain structures, 900 miles of pipe and 14 pump stations designed to control flooding by moving rain water away from the public and property and properly transport it to local waterways.

Aging Infrastructure: Maintenance of our storm water system is partially funded by a small storm water fee included in your water bill and supplemented by other City funds. It's estimated that almost $900 million are needed in the next five years to fully fund the repairs and improvements required for the maintenance of this infrastructure and protect the quality of our waterways.

Vital to San Diego: A fully functional and operational modern storm water system is important to the environmental and economic health of San Diego and is essential to our quality of life.

Think Blue appreciates everything you do to help protect our local waterways. Visit ThinkBlue.org for more information on how you can prevent pollution in our waterways.

To report storm water pollution in San Diego, call the Think Blue Hotline at 619-235-1000 or report it using the Get It Done App or on your desktop at SanDiego.gov/getitdone.

A Peek at the City's Ocean Monitoring Program

The Public Utilities Department's Ocean Monitoring Program is the pre-eminent leader in studying the effects of regional treatment processes on marine communities. Over 200 days of sampling typically occur annually along San Diego's beaches and offshore environments. Offshore sampling is accomplished using the Public Utilities' two monitoring vessels, the *Oceanus* and *Monitor III*.

Marine biologists use specialized sampling gear and instruments to collect the wide array of information necessary to define the ecological health of the ocean environment and to identify potential health concerns associated with the recreational use of San Diego's coastline.

Each year in March, the Ocean Monitoring Program holds an open house to allow the public to see what staff members do first-hand. This year nearly 500 people turned out to see the processes used to monitor the ocean and keep you safe. For more information, please see sandiego.gov/oceanmonitoring.

The Public Utilities Department's Ocean Monitoring Program is the pre-eminent leader in studying the effects of regional treatment processes on marine communities.

Marine Biologist Wendy Enright educates the public during the annual Ocean Monitoring Open House as part of the Public Utilities Department's community outreach.

"The City of San Diego's drinking water is of high quality and meets all state and federal guidelines. I would like our customers to know we believe strongly in our mission to deliver high quality drinking water 365 days a year."

Doug Campbell
Senior Chemist and Lab Director
19-year employee, City of San Diego

A teenager plays one of the games set up to simulate how the department tests water samples.

Two members of the Ocean Monitoring Program throw a net to catch marine life for study.

The City of San Diego is a Leader in Sustainability and Water Conservation

Even after the State of California's emergency drought declaration and many mandatory water use restrictions were lifted in 2017, we have not seen an increase in water usage locally. Meaning many of the water efficiency measures we have all implemented to eliminate wasteful water practices remain, even when there is no mandate to do so.

Just as water conservation is a way of life for all of us in San Diego, developing a sustainable water supply is a key initiative of the City of San Diego.

The City of San Diego purchases 81 percent of its water, which is imported from Northern California and the Colorado River. Importing water is costly, both for the commodity itself and for its movement to San Diego.

The City is embracing emerging technologies to make sure all San Diegans will continue to have a safe and reliable water supply into the future. In addition to our Pure Water program (see page 4), the Public Utilities Department actively pursues ways to diversify our water supply. This includes maximizing all local sources, collaborating with other agencies and reaching out to regional partners. Activities include protecting the City's reservoirs to support a safe and sustainable water supply.

Our efforts are impactful. In 2015, 4 percent of our water supply was from a local source. In 2017, nearly 20 percent of the water supply came from local surface and groundwater sources.

This results in a reduction of energy needed for water transportation, and the greenhouse gas emissions related to meeting San Diego's water needs have been declining year over year, with a total reduction of 11 percent since 2015.

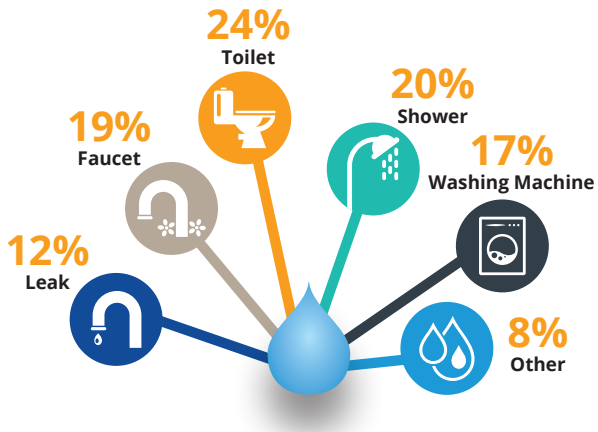
Water use by average American:

- 300 gallons per day at home
- 70 percent of this happens indoors
- Southern California has some of the highest per capita water use because of landscape

Source: Environmental Protection Agency

SD sustainability

Where Do We Use Indoor Water the Most?



Source: Environmental Protection Agency

San Diegans: **Consistent Conservation**

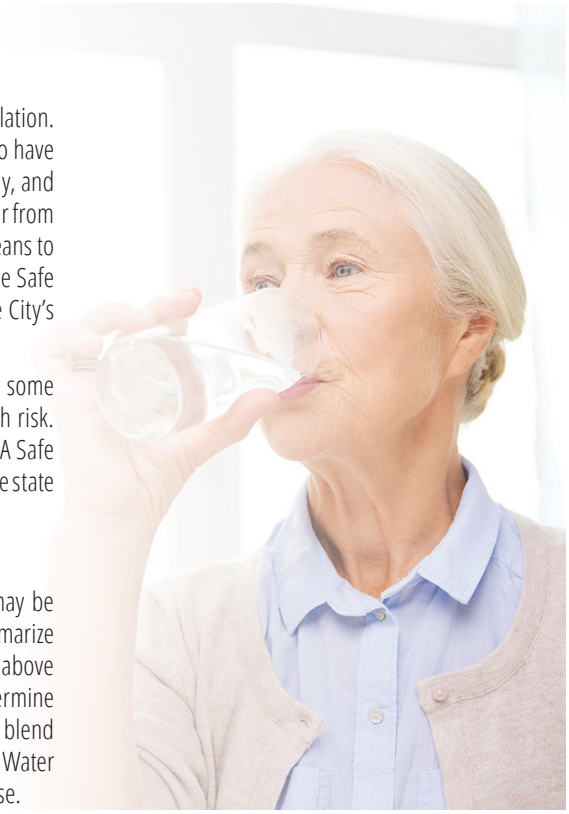
In **2014:** 134 **134 gallons** daily

In **2017:** 112 **112 gallons** daily

13% **13 percent water reduction**

Source: City of San Diego's Climate Action Plan 2017 Annual Report

Important Health Information



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. U.S. EPA/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 1-800-426-4791. During calendar year 2018, the water supply to each of the City's water treatment plants was monitored for *Cryptosporidium* and *Giardia*, and neither was detected.

Drinking water, including bottled water, may reasonably be expected to contain 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 EPA Safe Drinking Water Hotline 1-800-426-4791. For detailed information on drinking water regulations, visit the state Division of Drinking Water (DDW) website at waterboards.ca.gov/drinking_water.

HOW TO READ THE TABLES

The tables on the following pages list parameters that DDW requires the City to monitor, which may be associated with primary [health], secondary [aesthetic] or no established standards. These tables summarize monitoring from January – December 2018. The tables list all parameters that were detected at or above DDW's Detection Limit for Purposes of Reporting. The map on page 2 of this report can be used to determine the treatment plant or plants that supply water to your residence. Purchased treated water, which is a blend of water treated at the MWD Skinner Water Treatment Plant, the Water Authority Twin Oaks Valley Water Treatment Plant and the Carlsbad Desalination Plant, represents less than 10 percent of total water use.

DEFINITION OF TERMS

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

Location-based Running Annual Average (LRAA): The average of the most recent four quarters of monitoring performed at a distinct location in the distribution system. **Location-based Running Annual Averages** are calculated quarterly using 12 months of data and may include values obtained in 2017.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. **Primary Maximum Contaminant Levels** are set as close to the Public Health Goals or Maximum Contaminant Level Goals as is economically and technologically feasible. **Secondary Maximum Contaminant Levels** 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 health risk. **Maximum Contaminant Level Goals** are set by the EPA.

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. **Maximum Residual Disinfectant Level Goals** do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Notification Level (NL): Health-based advisory levels established by DDW for chemicals in drinking water that lack maximum contaminant levels. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected health risk. **Public Health Goals** are set by the California EPA.

Primary Drinking Water Standard (PDWS): Maximum Contaminant Levels and Maximum Residual Disinfection Levels for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

ABBREVIATIONS

A: absent

CA SMCL: California Secondary Maximum Contaminant Level

CSD MDL: City of San Diego Water Quality Laboratory Method Detection Limit – the lowest quantifiable concentration of a measured parameter detectable by the laboratory.

CU: Color Units

DLR: Detection Limit for Reporting

gr/Gal: grains per gallon

ml: milliliter

n/a: not applicable

ND: not detected (less than DLR, where applicable)

NTU: Nephelometric Turbidity Units

OU: Odor Units

pCi/L: picocuries per liter (a measure of radiation)

ppb: parts per billion or micrograms per liter (µg/L) – [1 ppb = 0.001 ppm]

ppm: parts per million or milligrams per liter (mg/L) – [1 ppm = 1,000 ppb]

TT (treatment technique): a required process intended to reduce the level of a contaminant in drinking water

µS/CM: micro-siemens/centimeter

< less than

> greater than

ENVIRONMENTAL MONITORING AND TECHNICAL SERVICES CONSUMER CONFIDENCE REPORT DATA - 2018

PRIMARY STANDARDS (MANDATORY HEALTH RELATED STANDARDS)

CHEMICAL PARAMETERS	UNITS	MCL	PHG	DLR	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER		MAJOR SOURCES IN DRINKING WATER
					ALVARADO		MIRAMAR		OTAY				
					AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	
Aluminum	ppm	1	0.6	0.05	ND	ND - ND	ND	ND - ND	ND	ND - ND	ND	ND - 0.1	Erosion of natural deposits; residue from some water treatment processes
Arsenic	ppb	10	0.004	2	ND	ND - ND	ND	ND - ND	ND	ND - ND	ND	ND - 3	Erosion of natural deposits; glass and electronics production waste
Fluoride (naturally occurring)	ppm	2	1	0.1	0.2	0.1 - 0.3	0.2	0.1 - 0.3	0.4	0.2 - 0.5	0.5	0.1 - 0.8	Erosion of natural deposits
Fluoride (treatment-related)*	ppm	2	1	0.1	0.5	0.2 - 0.7	0.5	0.2 - 0.7	0.4	0.2 - 0.6	0.7	0.6 - 0.9	Water additive that promotes strong teeth; erosion of natural deposits.
Nitrate (as N)	ppm	10	10	0.4	ND	ND - ND	ND	ND - ND	ND	ND - 0.4	ND	ND - 0.6	Runoff and leaching from fertilizer use; erosion of natural deposits
Nickel	ppb	100	12	10	ND	ND - ND	ND	ND - 10	ND	ND - ND	ND	ND - ND	Runoff and leaching from fertilizer use; erosion of natural deposits
Selenium	ppb	50	30	5	ND	ND - ND	ND	ND - ND	ND	ND - ND	ND	ND - 8	Erosion of natural deposits; refineries, mines, and chemical waste discharge

* Note: Optimal Fluoride Level as established by US Dept. of Health and Human Services and California Waterboards Division of Drinking Water is 0.7 ppm.

Primary standards (MCLs) are developed for the purpose of protecting the public from possible health risks associated with long-term exposure to contaminants. In this table there are six primary standards listed, which means that of the many primary standards set by DDW and the EPA, these were the ones detected at or above the DLR in San Diego's drinking water. These results are far below the MCL. In general, no health hazard is expected to exist when contaminant levels are below a Primary MCL. A list of the parameters which were analyzed for, but not detected, in San Diego's drinking water is posted at sandiego.gov/public-utilities/water-quality/water-quality-reports

California state law requires water agencies with more than 10,000 water service connections to supplement naturally-occurring fluoride in their drinking water. Our water system complies with this requirement to help prevent dental cavities in consumers. In 2018, the City of San Diego's source waters contained naturally-occurring fluoride between 0.1 and 0.8 ppm. State regulations require fluoride in treated water to be maintained at an optimum dose of 0.7 ppm. In 2018 treated water had fluoride concentrations ranging from 0.2 to 0.9 ppm, with average values of 0.4 to 0.7 ppm. Information about fluoridation, oral health, and current issues is available at cdc.gov/fluoridation/index.html.

RADIOACTIVE PARAMETERS	UNITS	MCL	PHG (MCLG)	DLR	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER		MAJOR SOURCES IN DRINKING WATER
					ALVARADO		MIRAMAR^		OTAY^				
					AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	
Gross Alpha Particle Activity	pCi/L	15	(0)	3	3.6	n/a	ND	n/a	6.0	n/a	ND	ND - 7	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50*	(0)	4	ND	n/a	ND	n/a	4.1	n/a	ND	ND - 6	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	2.1	n/a	1.0	n/a	ND	n/a	ND	ND - 2.2	Erosion of natural deposits

* DDW considers 50 pCi/L to be the level of concern for beta particles. ^ Monitoring required every three years (Alvarado data from 2018, Miramar and Otay data from 2017)

As water travels over the surface of the land or under ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. Radioactive materials can be naturally occurring near the earth's surface or brought to the surface as a result of oil and gas mining activities. The results in the table above are presented in units of picocuries per liter (pCi/L), a standard measurement that represents an amount of radiation per liter of water. San Diego's drinking water is substantially lower than the MCL for all radioactive parameters.

MICROBIOLOGICAL	UNITS	MCL	MCLG	DLR	CITY OF SAN DIEGO DISTRIBUTION SYSTEM		MAJOR SOURCES IN DRINKING WATER
					AVERAGE*	RANGE*	
Total Coliform Bacteria State Total Coliform Rule	% Positive	5% Positive	0	n/a	0.6%	0 - 3.1%	Naturally present in the environment

*Based on Monthly Percentages of Positive Total Coliform samples

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful bacteria may be present. DDW regulations require the City to test a minimum of 85 samples per week throughout our distribution system for total coliform bacteria, and to report the results, including the percentage of total coliform positive samples in a given month. To meet this requirement, in 2018 the City of San Diego collected and analyzed 6,963 total coliform samples from the distribution system, an average of 134 per week. The test also examines the presence of E. coli, which is a subgroup of Total Coliform. The MCL for total coliform is the presence of coliform in 5 percent or more of the samples analyzed in one month, meaning that if 100 samples are collected in March and five contain total coliform, a violation of the MCL has occurred. The regulations are written as a percentage of monthly samples because multiple variables can cause a positive result, including localized contamination at the tap. In 2018, the City did not exceed the monthly MCL for total coliform. In fact, this has never occurred in the City's system since this rule was established in 1989. The maximum value recorded in 2018 was 3.1 percent of monthly samples. When any sample tests positive for total coliform, three additional samples are collected and the cause of the positive result is investigated. All samples obtained from our distribution system in 2018 were absent of E. coli.

TREATMENT TECHNIQUE	UNITS	MCL	PHG	CITY OF SAN DIEGO TREATMENT PLANTS			PURCHASED TREATED WATER	MAJOR SOURCES IN DRINKING WATER
				ALVARADO	MIRAMAR	OTAY		
Turbidity	NTU	TT = 1 NTU	n/a	Max Level Found = 0.26	Max Level Found = 0.09	Max Level Found = 0.13	Max Level Found = 0.15	Soil runoff
Turbidity	NTU	TT = 95% of samples ≤ 0.3 NTU	n/a	100% of samples ≤ 0.3	100% of samples ≤ 0.3	100% of samples ≤ 0.3	n/a	Soil runoff

Turbidity is a measure of the cloudiness of the water and is regulated as a Treatment Technique (TT) – an indicator of the effectiveness of our treatment. The City's three water treatment plants monitor turbidity every 15 minutes to ensure consistent, high-quality drinking water production for our customers. TT performance goals established by DDW state that all samples should have turbidity less than 1 NTU, and 95 percent of the samples should have turbidity less than 0.3 NTU. All three of our treatment plants had 100 percent of turbidity values less than 0.3 NTU; the maximum values measured in 2018 were 0.26 NTU for Alvarado WTP, 0.09 NTU for Miramar WTP, and 0.13 NTU for Otay WTP. These consistent and very low turbidity results have led to our treatment plants receiving performance awards. For example:

- *The Otay Water Treatment Plant (WTP) has been awarded the Director's Award from the American Water Works Association (AWWA) Partnership for Safe Water (PSW) Program for 11 consecutive years.*
- *The Miramar WTP has received the Director's Award for seven years and the President's Award for six consecutive years.*
- *Our award-winning Alvarado Treatment Plant participates in the PSW program, meeting all turbidity standards.*

CONTINUED: PRIMARY STANDARDS (MANDATORY HEALTH RELATED STANDARDS)

LEAD AND COPPER STUDY	UNITS	ACTION LEVEL	PHG	DLR	SAMPLES TAKEN FROM CUSTOMER TAPS				Number of Schools Sampled for Lead	MAJOR SOURCES IN DRINKING WATER
					90th PERCENTILE CONCENTRATION	SAMPLING SITES	NUMBER EXCEEDING AL	VIOLATION		
Copper	ppm	1.3	0.3	0.05	0.61	64	0	NO	265*	Internal corrosion of household plumbing systems
Lead	ppb	15	0.2	5	ND	64	1	NO		Internal corrosion of household plumbing systems

Note: Lead and Copper Rule Monitoring mandated every three years. Most recent monitoring conducted in 2017.
In addition to the EPA Lead and Copper study and schools sampling, the City of San Diego analyzed 72 samples from our three drinking water treatment plants in 2018. All results were below the DLR.
* Represents total number of schools sampled in 2017 and 2018.

Lead and copper are at Nondetectable levels in the drinking water we produce, but can enter drinking water through plumbing materials used in homes or businesses. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage. In 1991, the EPA published the Lead and Copper Rule (LCR) which, along with corrosion control and other treatment practices, requires monitoring of lead and copper at customer taps. The purpose of the LCR is to assess the potential of lead and copper to leach into drinking water in homes and businesses from the plumbing installed between the water meter and the tap. If lead concentrations at customer taps exceed an Action Level (AL) of 15 ppb or copper concentrations exceed an AL of 1.3 ppm in more than 10 percent of taps sampled, we are required to inform the public and undertake a number of additional actions to ensure comprehensive corrosion control.

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. The City of San Diego 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 two 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 epa.gov/lead.

Lead and Copper Rule monitoring must be conducted every three years. In 2017, 64 customers provided samples from their taps to the City of San Diego for lead and copper analysis. None of the residences had a copper result above the AL; just one residence had lead above the AL, representing 1.5 percent of the residences we tested. Because less than 10 percent of our results were above the AL for both lead and copper, our water is considered noncorrosive, and no additional actions are required. Our next system-wide study will be conducted in 2020.

In 2017, DDW issued a Permit Amendment requiring water utilities to sample the drinking water of any school that requests testing to determine if lead is present in the school's private plumbing or water fixtures. Additionally, Assembly Bill 746 was signed into law in October 2017, requiring California water providers to conduct lead testing at public K-12 schools within their service area. The table lists the number of schools the Public Utilities Department has tested. To obtain testing results from individual schools, please contact the school directly or visit the district website.

DETECTED DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUAL AND DISINFECTION BYPRODUCT PRECURSORS

	UNITS	MCL	PHG	DLR	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER		MAJOR SOURCES IN DRINKING WATER
					ALVARADO		MIRAMAR		OTAY				
					AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	
Bromate*	ppb	10	0.1	5.0	ND	ND - 9.6	ND	ND - ND	n/a	n/a	ND	ND - 15	Byproduct of drinking water disinfection
Chlorate	ppb	NL=800 PPB		20	n/a	n/a	n/a	n/a	213	ND - 302	131	43 - 290	Byproduct of drinking water disinfection
Chlorite**	ppm	1.0	0.05	0.020	n/a	n/a	n/a	n/a	0.25	ND - 0.53	n/a	n/a	Byproduct of drinking water disinfection
Total Organic Carbon [TOC]	ppm	TT	n/a	0.3	2.2	1.8 - 3.0	2.4	2.1 - 2.7	3.8	1.8 - 6.6	2.4	2.0 -2.7	Various natural and man-made sources

*Required for Alvarado, Miramar, and Purchased Treated Water **Required for Otay

	UNITS	MCL [MRDL]	PHG [MRDLG]	CSD MDL (DLR)	CITY OF SAN DIEGO DISTRIBUTION SYSTEM			MAJOR SOURCES IN DRINKING WATER
Disinfectant Residual [Chloramines as Cl_2]	ppm	[4][B]	[4]	0.1	Distribution system average = 1.9	Range = ND - 3.4	----	Drinking water disinfectant added for treatment
Chlorite[A]	ppm	1.0	0.05	(0.020)	Distribution system average = 0.19	Range = ND - 0.46	----	Byproduct of drinking water disinfection
Haloacetic acids [HAA5]	ppb	60[C]	n/a	n/a	Maximum LRAA = 17	Range = ND - 30	Violation - NO	Byproduct of drinking water disinfection
Total Trihalomethanes [TTHMs]	ppb	80[C]	n/a	n/a	Maximum LRAA = 58	Range = 8.5 - 100	Violation - NO	Byproduct of drinking water chlorination

[A] Chlorite monitoring required only in the Southern section of the distribution system.
[B] Compliance is determined by the distribution system average.
[C] Total Trihalomethane and HAA5 compliance is based on quarterly Locational Running Annual Averages (LRAA)

Drinking water must be disinfected to ensure that any potentially harmful microbes are neutralized. There are a variety of disinfection strategies used throughout the United States. San Diego utilizes some of the more advanced disinfection technologies available. Our Alvarado and Miramar treatment plants use ozone and chloramines for disinfection. Ozone produces fewer disinfection byproducts than chlorine or chloramines alone and is considered a superior disinfection method. However, all disinfectant strategies have the potential to create a byproduct. When ozone is used, bromate is monitored as a disinfection byproduct. The City's Otay WTP uses chlorine dioxide and chloramines for disinfection. When chlorine dioxide is used, chlorite is monitored as a disinfection byproduct in the plant effluent and distribution system. All 2018 results for bromate and chlorite are below the MCLs established by DDW. Total Organic Carbon (TOC) has no health effects. It is monitored and reported here because it provides an assessment for the potential to form disinfection byproducts.

As drinking water travels from the City's WTPs through the distribution system to homes and businesses, a disinfectant residual must be maintained in order to prevent growth of potentially harmful microbes. In San Diego, chloramines are used for this purpose. The City performs frequent and comprehensive monitoring to ensure that disinfectant levels remain in the proper range throughout our large and complex distribution system. The Maximum Residual Disinfectant Level (MRDL) is 4 ppm. In 2018 the City analyzed 7,044 samples for chloramines throughout the distribution system; the average residual was 1.9 ppm and the maximum was 3.4 ppm.

Another category of disinfection byproducts that the EPA and DDW regulate are Total Trihalomethanes (THMs) and Haloacetic Acids (HAA5). Compliance with EPA's Stage 2 Disinfection ByProduct (DBP) rule is based on the running annual average at each location in the distribution system. The MCL for TTHM LRAA is 80 ppb, and the MCL for HAA5 LRAA is 60 ppb. The City has had no violations of the EPA Stage 1 and Stage 2 DBP MCLs since the program was formalized in 2002. In 2018, our highest LRAA for TTHM was 58 ppb, and individual measurements ranged from 8.5 to 100 ppb. For HAA5, our highest LRAA was 17 ppb, and individual measurements ranged from ND to 30 ppb.

SECONDARY STANDARDS (AESTHETICS STANDARDS)

	UNITS	CA SMCL	CSD MDL (DLR)	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER		MAJOR SOURCES IN DRINKING WATER
				ALVARADO		MIRAMAR		OTAY				
				AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	
Aluminum	ppb	200	(50)	ND	ND - ND	ND	ND - ND	ND	ND - ND	ND	ND - 100	Erosion of natural deposits; residue from some water treatment processes
Chloride	ppm	500	0.5	91.9	71.1 - 106	86.1	65.9 - 95.1	139	93.9 - 176	85.2	55.2 - 118	Runoff/leaching from natural deposits; seawater influence
Color	CU	15	1	ND	ND - 1	ND	ND - 2	1	ND - 4	ND	ND - 1	Naturally - occurring organic materials
Manganese	ppb	50	(20)	ND	ND - ND	ND	ND - ND	ND	ND - 41	ND	ND - 22	Leaching from natural deposits
Odor - Threshold	OU	3	(1)	ND	ND - 1	ND	ND - ND	1	1 - 1	2	ND - 3	Naturally - occurring organic materials
Specific Conductance	µS/cm	1,600	n/a	795	578-909	741	541-836	936	788-1070	828	810 - 851	Substances that form ions when in water; seawater influence
Sulfate	ppm	500	(0.5)	153	73.0 - 216	143	69.0 - 190	139	107 - 181	115	8.5 - 175	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	ppm	1000	10	480	332 - 588	451	303 - 538	556	477 - 609	415	119 - 526	Runoff/leaching from natural deposits

Secondary standards (Secondary MCLs) are set to protect the odor, taste, and appearance of drinking water. If present at or above the Secondary MCL, these parameters may cause the water to appear cloudy or colored, or to have a different or unusual taste or odor. These parameters are not considered to present a risk to human health at or above Secondary MCL levels. All measurements of Secondary Standards were below the Secondary MCL in 2018.

OTHER PARAMETERS THAT MAY BE OF INTEREST

	UNITS	MCL	PHG	CSD MDL	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER	
					ALVARADO		MIRAMAR		OTAY			
					AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
Sodium	ppm	n/a	n/a	20	81.5	58.9 - 95.1	76.5	54.1 - 86.7	106	80.3 - 126	74.7	16.2 - 92.0
Total Hardness	ppm	n/a	n/a	10	224	151 - 292	208	133 - 258	236	209 - 264	167	42.2 - 238
Total Hardness	gr/Gal	n/a	n/a	0.6	13.1	8.83 - 17.1	12.2	7.77 - 15.1	13.8	12.2 - 15.4	9.8	2.47 - 13.9
Alkalinity - Total as $CaCO_3$	ppm	n/a	n/a	20	112	91.6 - 129	103	79.1 - 121	129	96.9 - 161	93.1	42.0 - 110
pH	pH	n/a	n/a	n/a	7.95	7.23 - 8.43	8.05	7.11 - 8.55	8.03	7.09 - 8.41	8.31	7.1 - 8.66

Water quality parameters that may be of interest to our consumers, but do not have MCLs or PHGs and are not considered to present a risk to human health, are included in the table above. Although sodium and hardness do not have MCLs, they are of interest to many consumers who are concerned about sodium intake and may believe that the hardness of the water could affect their health. Therefore, monitoring and reporting are required by DDW. Sodium refers to the salt present in the water and is generally naturally occurring. Hardness is the sum of positively-charged mineral ions present in the water, essentially the sum of magnesium and calcium. These minerals are usually naturally occurring. Alkalinity and pH are included here because they have proven to be of interest to our customers.

DETECTED UNREGULATED PARAMETERS

	UNITS	NOTIFICATION LEVEL	DLR (PHG)	CITY OF SAN DIEGO TREATMENT PLANTS						PURCHASED TREATED WATER	
				ALVARADO		MIRAMAR		OTAY			
				AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
Boron	ppm	1	0.1	0.1	0.1 - 0.1	0.1	0.1 - 0.1	0.1	ND - 0.2	0.3	0.1 - 0.9
N-Nitrosodimethylamine (NDMA)	ppt	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3	2 - 4
Chromium, hexavalent (CrVI)	ppb	n/a	(0.02)*	0.05	n/a	0.06	n/a	0.07	n/a	0.05	ND - 0.17

* The DLR of 1 ppb and the MCL of 10 ppb for Chromium VI were repealed in 2017. The value listed here is the PHG for Chromium VI.

UCMR4 STUDY

UCMR4 PARAMETERS[1]	UNITS	UCMR4 MRL (MDL)	CITY OF SAN DIEGO TREATMENT PLANTS						CITY OF SAN DIEGO DISTRIBUTION SYSTEM	
			ALVARADO		MIRAMAR		OTAY			
			AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
Bromide*	ppm	(0.02)	0.10	0.05 -0.16	0.06	0.04 -0.11	0.20	0.04 - 0.35	n/a	n/a
Manganese	ppb	0.4	2.2	ND - 8.2	0.9	0.6 - 1.2	0.2	ND - 0.7	n/a	n/a
Total Organic Carbon [TOC]*	ppm	(1)	3.2	2.7 - 3.7	2.7	2.6 - 2.9	4.9	2.6 - 7.0	n/a	n/a
HAA9**	ppb	n/a	n/a	n/a	n/a	n/a	n/a	n/a	26	4.1 - 40

[1] UCMR4 samples were collected in 2018 * As measured in untreated plant influent

** HAA9 is the sum of Bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, and trichloroacetic acid.

The parameters listed in the Detected Unregulated Parameters section are not regulated by DDW or the EPA, and monitoring is not required. Unregulated contaminant monitoring helps these regulatory agencies to determine where certain contaminants occur and whether the contaminants need to be regulated. Boron and N-Nitrosodimethylamine (NDMA) have been issued Notification Levels (NL) by DDW. If detected above the NL, customers must be notified of the presence of these parameters. The results presented here are significantly lower than the NL. Hexavalent Chromium (CrVI) was issued an MCL of 10 ppb and a DLR of 1 ppb by DDW in 2014. However, these were withdrawn in 2017. The values presented here are approximately 100 times less than 10 ppb.

As part of the 1996 Safe Drinking Water Act (SDWA) amendments, every five years EPA selects from the Contaminant Candidate List (CCL) up to 30 unregulated contaminants to be monitored by public water systems as part of the Unregulated Contaminant Monitoring Rule (UCMR) program. The CCL is a list of contaminants that are not regulated but are known or anticipated to occur in public water systems, and may warrant future regulation under the Safe Drinking Water Act. The results of UCMR studies provide a basis for future regulatory actions to protect public health. While the program runs through 2020, the City completed UCMR4 sampling in 2018.

UCMR Minimum Reporting Levels (MRLs) are established based on the evolving capabilities of available analytical methodology, not based on a level established as significant or harmful. In short, UCMR examines what is in the drinking water, but additional information is needed to determine whether these contaminants pose a health risk.

Results of UCMR measurements should be interpreted with this in mind. The detection of a UCMR parameter above the MRL does not represent cause for concern, in and of itself. Rather, the results should be judged considering available health effects information, which for unregulated contaminants is often still under development or being refined.

San Diego's drinking water was tested by an EPA-approved contract laboratory in 2018 for 30 UCMR4 unregulated contaminants. This included 10 different cyanotoxins, none of which were detected. Twenty additional chemicals were monitored, including metals, pesticides, and alcohols. Of these 32 parameters, two were detected – manganese and HAA9. Additionally, two indicators of water quality were monitored in untreated water – bromide and Total Organic Carbon (TOC).

The City *of*
SAN DIEGO

Public Utilities Department
9192 Topaz Way
San Diego, CA 92123

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Value
Reliability
Customer Service

The City *of*
SAN DIEGO

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

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

Arabic
"هذا ألتقرير يحتوي على معلوماً ت مهمّة تتعلق بمياه ألشفة (أو ألشرب).
ترجم ألتقرير , أو تكلم مع شخص يستطيع أن يفهم ألتقرير."

Chinese (Traditional)
此份有關你的食水報告,內有重要資料和訊息,請找
他人為你翻譯及解釋清楚。

Chinese (Simplified)
此份有关你的食水报告,内有重要资料和讯息,请找
他人为你翻译及解释清楚。

Farsi
لطفا اگر نمیتوانید این اطلاعات را بزبان انگلیسی
این اطلاعیه ش
بخوانید لطفا از کسی که میتواند یاری بگیرید تا مطالب را برای شما به فارسی ترجمه کند.

French
Cé rapport contient des information importantes concernant votre eau potable.
Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

Hmong
Daimntawv tshaj tawm no muaj lus tseemceeb txog koj cov dej haus.
Tshab txhais nws, los yog tham nrog tej tug neeg uas totaub txog nws.

Japanese
この情報は重要です。
翻訳を依頼してください。

Korean
이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

Laotian
ລາຍງານນີ້ມີຂໍ້ມູນສຳຄັນກ່ຽວກັບນ້ຳປະປາຂອງທ່ານ. ຈົ່ງໃຫ້ຄົນອື່ນແປຄວາມໃຫ້ທ່ານ,
ຫລືໃຫ້ປຶກສາກັບຄົນໃດຄົນໜຶ່ງທີ່ເຂົ້າໃຈເລື້ອງ.

Russian
Этот отчет содержит важную информацию о вашей питьевой воды. Переведите
его или поговорите с тем, кто это понимает.

Swahili
Shauri hii niya kufahamisha uzuri wa maji ya kunyua.
Shauri nilazima egeuzwe kwa yoyote hajui Kiingereza.

Tagalog
Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Vietnamese
Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.

Khamer
របាយការណ៍នេះមានពត៌មានសំខាន់អំពីទឹកបរិភោគ ។ សូមបកប្រែឬពិគ្រោះជាមួយអ្នកដែលមើលយល់របាយការណ៍នេះ ។

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