PADRE DAM
Municipal Water District

2023 Water Quality Report

ABOUT THIS REPORT

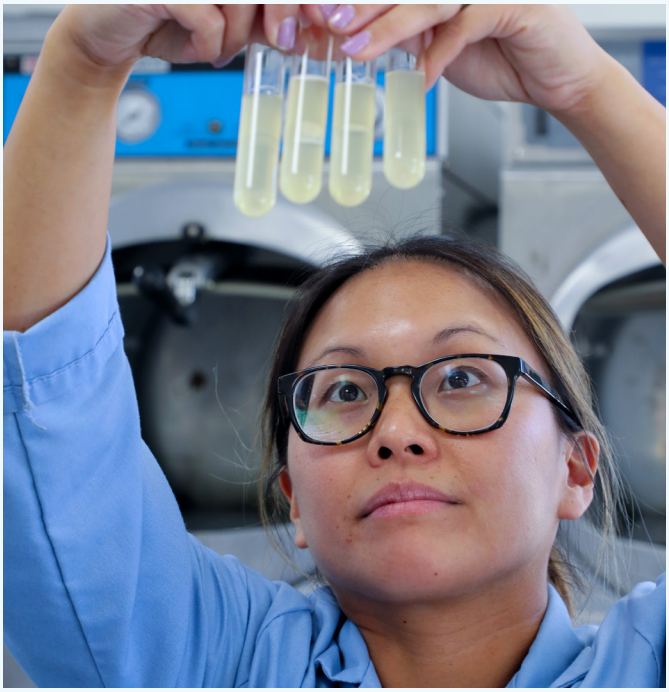
Padre Dam's mission is to provide high quality water services to our customers in the most effective manner possible, earning customer and community respect. As part of this mission, Padre Dam compiles a Water Quality Report each year with information about the safety and quality of your drinking water.

This report is a snapshot of water quality in 2023. Included are details about where your water comes from, what it contains and how it compares to State and Federal standards.

QUESTIONS

This report follows the State Board Guidance for Consumer Confidence Reports dated January 2024. It is our intent to provide this report to all of our consumers. Additional copies may be obtained by reaching Alexa Bertola in Communications at 619-258-4634 or abertola@padre.org.

If you have any questions or concerns about this Water Quality Report, please contact Paul Clarke, Director of Operations and Water Quality, at 619-258-4746 or pclarke@padre.org.



We always welcome public participation and comments during our regularly scheduled board meetings. Meetings are held the first and third Wednesday of each month at 4:00 pm. Visit **www.padredam.org/board** for more information.

Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien. Favor de comunicarse Padre Dam Municipal Water District a 9300 Fanita Parkway o 619-258-4600 para asistirlo en español.

IMPORTANT: WHAT'S IN MY WATER?

In 2023, Padre Dam Municipal Water District's drinking water met or surpassed every public health requirement set by the State Water Resources Control Board Division of Drinking Water (State Board) and the United States Environmental Protection Agency (USEPA).

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 USEPA Safe Drinking Water Hotline at 1-800-426-4791, or online at: **https://www.epa.gov/ground-water-and-drinking-water**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons 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. The USEPA and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available online at: **https://www.epa.gov/ground-water-and-drinking-water**

POTENTIAL SOURCE WATER CONTAMINANTS

The sources of drinking water in San Diego County (both tap and bottled water) include the ocean, 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 may pick up substances resulting from the presence of animals 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 salt and metals that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- **Pesticides and herbicides,** which may 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive contaminants,** 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 USEPA and the State 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.

WHERE YOUR WATER COMES FROM

SOURCE WATER ASSESSMENT

Metropolitan assessed the vulnerability of its imported water in 2020 for the Colorado River and 2021 for the State Water Project. These source waters are both exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires and other watershed-related factors that could affect water quality. Treatment to remove specific contaminants can be more expensive than measures to protect water at the source, which is why Metropolitan and other water agencies invest resources to support improved watershed protection programs. For a copy of these assessments, contact Metropolitan at 213-217-5696.

Helix Water District assessed Lake Jennings in March 2021. This assessment found the lake's water quality to be vulnerable to wastewater, recreation, development, equestrian properties and pesticide/herbicide use. Contact Helix Water District at 619-667-6248 for more information on their assessment.

WATER SOURCES

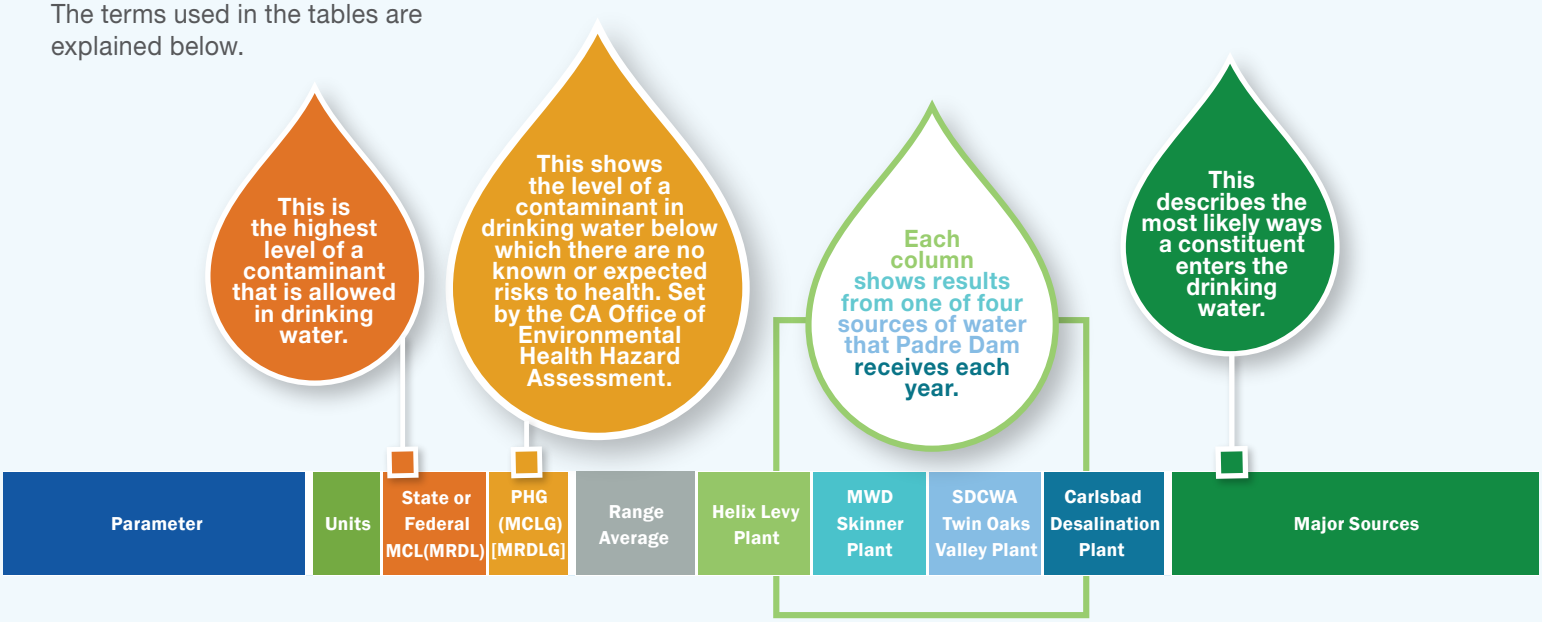
Padre Dam imports 100 percent of its potable water supply from the Metropolitan Water District of Southern California (Metropolitan) and the San Diego County Water Authority (SDCWA). The water is treated at Metropolitan's Skinner Treatment Plant near Temecula, the SDCWA's Twin Oaks Valley Treatment Plant in San Marcos, Claude "Bud" Lewis Carlsbad Desalination Plant and Helix Water District's Levy Treatment Plant in Lakeside. Metropolitan, SDCWA, Helix and Padre Dam coordinate annually to assess water quality levels and produce this Water Quality Report.

The tap water you received from Padre Dam in 2023 was blended water from the Colorado River System, the California State Water Project, ocean water from the Desalination Plant and local watersheds within San Diego County.

HOW TO READ THE FOLLOWING TABLES

ABOUT THE TABLES

The tables on the following pages are a summary of the testing performed on your water in 2023. To read the tables, compare the health standards for organic and inorganic constituents in your water with the levels recorded at the Skinner Treatment Plant, Twin Oaks Valley Treatment Plant, Claude "Bud" Lewis Carlsbad Desalination Plant and Levy Treatment Plant. The terms used in the tables are explained below.



TERMS

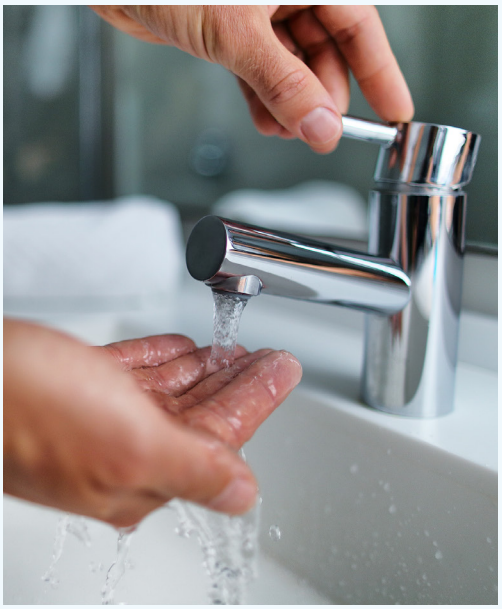
Primary Drinking Water Standards (PDWS) Primary Drinking Water Standards (PDWS) MCLs and MRDLs for contaminants that affect health along with their monitoring, reporting and treatment requirements.
Maximum Contaminant Level Goal (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.
Public Health Goal (PHG) is 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 Office of Environmental Health Hazard Assessment.
Maximum Contaminant Level (MCL) is 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 Residual Disinfectant Level (MRDL) is the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
Maximum Residual Disinfectant Level Goal (MRDLG) is the level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.
Secondary Standards are set by the State Board for constituents that affect the aesthetic quality of water, such as taste, odor and color.
PPM is the abbreviation for parts per million, or in volume terms, milligrams per liter (mg/L). For example, one part per million is one cent in $10,000, or one minute in 2 years.
PPB is the abbreviation for parts per billion, or in volume terms, micrograms per liter (ug/L). For example, one part per billion is one cent in $10,000,000, or one minute in 2,000 years.
PPT is the abbreviation for parts per trillion, or in volume terms, nanograms per liter (ng/L). For example, one part per trillion is one second in nearly 32,000 years.
Treatment Technique (TT) is a required process intended to reduce the level of a contaminant in drinking water.

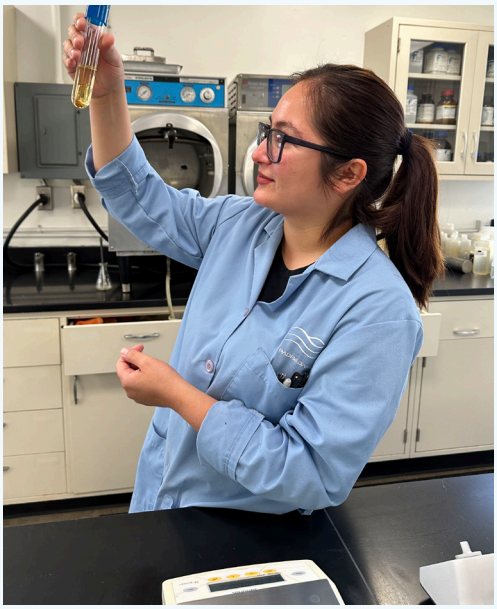
OTHER ABBREVIATIONS USED

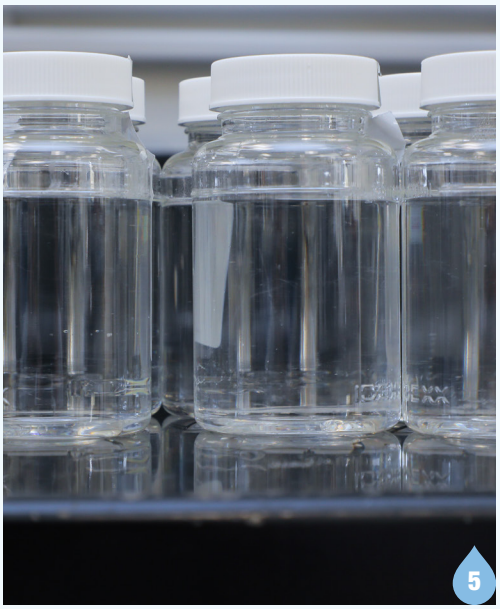
AI	Aggressiveness index
AL	Action level
CFU	Colony-forming units
DBP	Disinfection by-products
DLR	Detection limits for reporting purposes
GPG	Grains per gallon
HPC	Heterotrophic plate count
N	Nitrogen
NA	Not applicable
ND	Not detected
NL	Notification level
NTU	Nephelometric turbidity units
pCi/L	Picocuries per liter
ppq	Parts per quadrillion
pg/L	Picograms per liter
ppt	Parts per trillion
ng/L	Nanograms per liter
RAA	Running annual average
SI	Saturation index (Langelier)
SS	Single sample
TOC	Total organic compound
TON	Threshold odor number
uS/cm	MicroSiemen per centimeter

PRIMARY STANDARDS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant	Major Sources
PRIMARY STANDARDS - Mandatory Health-Related Standards									
CLARITY									
Combined Filter Effluent Turbidity (a)	NTU	TT=0.3	NA	Highest	0.19	0.07	0.019	0.08	Soil runoff
	%	95%	NA	% ≤ 0.3	100	100	100	100	
MICROBIOLOGICAL (b)									
					PD Distribution System				
Total Coliform Bacteria	%	5	0	Range	ND				Naturally present in the environment
E. coli (State Revised Total Coliform Rule)	#	0	0	Range	0				Naturally present in the environment
INORGANIC CHEMICALS									
Aluminum (c)	ppb	1,000	600	Range	87 - 230	ND - 110	ND - 0.17	ND	Erosion of natural deposits; residue from some surface water treament processes
				Average	133	113	ND	ND	
Arsenic	ppb	10	0.004	Range	ND	ND	2.1	ND	Erosion of natural deposits; runoff from orchards; glass and electronics production
				Average	ND	ND	SS	ND	
Barium	ppb	1,000	2,000	Range	ND	116	59 - 91	ND	Oil and metal refineries discharge; natural deposits erosion
				Average	ND	116	ND	ND	
Chromium-6	ppb	NA	0.02	Range	ND	ND	ND - 0.18	ND	Industrial discharge; erosion of natural deposits
				Average	ND	ND	0.08	ND	
Fluoride (d) Treatment-related	ppm	2	1	Range	0.6 - 0.7	0.6 - 0.8	0.6 - 0.6	0.6 - 0.8	Water additive and natural deposits discharge from fertilizer and aluminum factories
				Average	0.6	0.7	0.6	0.7	
Nitrate (as N) (e)	ppm	10	10	Range	ND	ND	ND	ND	Runoff and leaching from fertilizer use, septic tanks and sewage; erosion of natural deposits
				Average	ND	ND	SS	ND	
Selenium	ppb	50	30	Range	NA	ND	ND	ND	Refineries, mines and chemical waste discharge; runoff from livestock lots
				Average	NA	ND	SS	ND	
RADIOLOGICALS (f)									
Gross Alpha Particle Activity	pCi/L	15	0	Range	ND - 3.8	ND - 4	ND - 4	ND	Erosion of natural deposits
				Average	ND	ND	ND	ND	
Gross Beta Particle Activity	pCi/L	50	0	Range	ND	ND - 8	4.9 - 5.1	ND	Erosion and decay of man-made and natural deposits
				Average	ND	ND	5	ND	
Combined Radium-226/228	pCi/L	5	0	Range	NA	ND	ND	0.094 - 0.715	Erosion of natural deposits
				Average	NA	ND	ND	0.48	
Uranium	pCi/L	20	0.43	Range	ND - 2.6	ND - 3	ND	ND	Erosion of natural deposits
				Average	1.3	2	ND	ND	
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS (g)									
					PD Distribution System				
Total Trihalomethanes (TTHM) (h)	ppb	80	NA	Range	2.2 - 21				By-product of drinking water chlorination
				Highest RAA	24				
Haloacetic Acids (five) (HAA5) (i)	ppb	60	NA	Range	0 - 7.1				By-product of drinking water chlorination
				Highest RAA	5				
Total Chloramine Residual (Cl2)	ppm	[4.0]	[4.0]	Range	0.55 - 3.6				By-product of drinking water chlorination, Drinking water disinfectant added for treatment
				Highest RAA	2.05				
Bromate (j)	ppb	10	0.1	Range	ND - 6.2	ND - 2.6	ND - 7.4	NA	By-product of drinking water ozonation
				Highest RAA	ND	ND	ND	NA	







SECONDARY STANDARDS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant	Major Sources
SECONDARY STANDARDS - Aesthetic Standards									
Aluminum (c)	ppb	200	600	Range	87 - 230	ND - 110	ND - 0.17	ND	Erosion of natural deposits; residue from surface water treatment processes
				Highest RAA	133	113	ND	ND	
Chloride	ppm	500	NA	Range	65 - 78	72 - 110	100	35 - 98	Runoff/leaching from natural deposits; seawater influence
				Average	71	91	SS	75	
Color	Units	15	NA	Range	ND	1	ND - 5	ND	Naturally occurring organic materials
				Average	ND	1	1	ND	
Odor Threshold	TON	3	NA	Range	ND	2	ND	ND	Naturally occurring organic materials
				Average	ND	2	SS	ND	
Specific Conductance	µS/cm	1,600	NA	Range	590 - 740	664 - 1,040	NA	225 - 506	Runoff or leaching from natural deposits, seawater influence
				Average	657	852	NA	405	
Sulfate	ppm	500	NA	Range	72 - 140	113 - 236	122 - 210	13 - 15	Runoff/leaching from natural deposits; industrial wastes
				Average	104	174	166	13.5	
Total Dissolved Solids (k) (TDS)	ppm	1,000	NA	Range	350 - 560	401 - 670	570	122 - 318	Runoff/leaching from natural deposits
				Average	427	536	SS	216	
OTHER PARAMETERS - Chemical (l)									
Alkalinity as $CaCO_3$	ppm	NA	NA	Range	85 - 120	92 - 125	130	46 - 87	Runoff/leaching of natural deposits
				Average	102	108	SS	63	
Boron (m)	ppb	NL = 1,000	NA	Range	ND - 0.11	130	140	0.39 - 0.90	Leaching of rocks, soils, wastewater and fertilizers, runoff/leaching from industrial wastes
				Average	ND	130	SS	0.62	
Calcium	ppm	NA	NA	Range	39 - 54	39 - 72	61	17 - 55	Runoff/leaching from natural deposits
				Average	45	56	SS	22	
Chlorate	ppb	NL = 800	NA	Range	NA	17	270 - 420	NA	By-product of drinking water chlorination, industrial processes
				Average	NA	17	336	NA	
Corrosivity (n) (as Aggressiveness Index)	AI	NA	NA	Range	11.8 - 12.7	12.5	NA	10.3 - 11.2	Elemental balance in water; affected by temperature, other factors
				Average	12.2	12.5	NA	10.6	
Corrosivity (o) (as Saturation Index)	SI	NA	NA	Range	NA	0.62 - 0.75	NA	0.04 - 0.62	Elemental balance in water; affected by temperature, other factors
				Average	NA	0.68	NA	0.28	
Hardness as $CaCO_3$	ppm	NA	NA	Range	150 - 316	165 - 291	NA	44 - 80	Sum of magnesium and calcium cations present in the water and is naturally occurring
				Average	205	228	NA	56	
Magnesium	ppm	NA	NA	Range	16 - 23	15 - 27	24	0.9 - 1.1	Runoff/leaching from natural deposits
				Average	19	21	SS	1.1	
pH	pH Units	NA	NA	Range	8.1 - 8.5	8.2 - 8.5	7.8 - 8.7	8.2 - 8.9	NA
				Average	8.3	8.4	8.3	8.5	
Potassium	ppm	NA	NA	Range	3.5 - 5.0	3.6 - 4.8	4.8	0 - 389	Naturally-occurring salt present in the water
				Average	4.2	4.2	SS	45	
Silica	ppm	NA	NA	Range	6.6 - 14.0	NA	ND	ND	
				Average	10.7	NA	ND	ND	
Sodium	ppm	NA	NA	Range	52 - 71	69 - 103	99	40 - 61	Naturally-occurring salt present in the water
				Average	63	86	SS	55	
TOC	ppm	TT	NA	Range	1.7 - 3.8	2.3 - 3.0	2.0 - 2.5	NA	Various natural and man-made sources
				Highest RAA	2.8	2.6	2.2	NA	
Vanadium	ppb	NL = 10	NA	Single	3.6	ND	3.0	ND	Naturally-occuring; industrial waste discharge
				Sample	SS	ND	SS	ND	
N-Nitrosodimethylamine (NDMA)	ppt	NL = 50	NA	Single	NA	3.2	ND	NA	By-product of drinking water chloramination; industrial processes
				Sample	NA	SS	SS	NA	
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR5) (p)									
					PD Distribution System				
Lithium	ppb	NA	NA	Range	9.7 - 47				A naturally occurring element
				Average	20.4				
PFBA	ppb	NA	NA	Range	0 - 0.0058				Manmade substances for fire training and response, industrial sites and landfills
				Average	0.0015				

PADRE DAM LEAD & COPPER RESULTS

Padre Dam is required to test lead and copper levels within our service area every three years. Padre Dam last tested for lead and copper in 2022. Forty-four locations were sampled. The results were well below regulatory action levels and are provided in the table below.

In response to new permitting requirements from the State Water Resources Control Board, Padre Dam contacted all public schools within our service area in 2017 and offered lead testing.

All 21 public schools within Padre Dam's service area participated in testing in 2017. Please contact each school for individual site testing results.

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	90% percentile of all samples
Copper	ppm	1.3	0.05	0.28
Lead	ppm	0.015	0.005	0.002

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. Padre Dam 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. Padre Dam suggests you collect this flushed water with a bucket and use it to water plants or other non-consumable use. 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 1-800-426-4791 or online at **https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.**

SODIUM & HARDNESS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant
Sodium	ppm	NA	NA	Range	52 - 71	69 - 103	99	40 - 61
				Average	63	86	SS	55
Hardness (parts per million)	ppm	NA	NA	Range	150 - 316	165 - 291	NA	44 - 80
				Average	205	228	NA	56
Hardness (grains per gallon)	gpg	NA	NA	Range	8.8 - 18.5	9.7 - 17	NA	2.6 - 4.7
				Average	12.0	13.3	NA	3.3

FOOTNOTES TO TABLES

(a) The turbidity level of the combined filter effluent shall be less than or equal to 0.3 NTU (0.1 NTU at Twin Oaks Treatment Plant and Carlsbad Desalination Plant) in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance.

(b) 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. The MCL was not violated. The E. coli MCL is based on routine and repeat samples testing positive for coliforms and/or E. coli, or failure to analyze required repeat samples. No E. coli were detected in the water treatment system and distribution system. No Level 1 assessment or MCL violations occurred.

(c) Aluminum has both primary and secondary standards. Compliance with the state MCL for aluminum is based on RAA.

(d) Optimal fluoride level as established by US Department of Health and Human Services and the State Water Resources Control Board is 0.7 ppm. Skinner - Metropolitan was in compliance with all provisions of the State's fluoridation requirements. Fluoride feed systems were temporarily out of service during treatment plant shutdowns and/or maintenance work in 2023, resulting in occasional fluoride levels below 0.7 ppm. Carlsbad - Fluoride samples that were below target ranges were blended with other water supply sources to maintain compliance in water distributed to consumers. Twin Oaks - In compliance with all provisions of the State's Fluoridation System Requirements.

(e) State MCL is 45 ppm as nitrate, which equals 10 ppm as N.

(f) Skinner - Samples are collected quarterly for gross beta particle activity, and annually for tritium and strontium-90. Gross alpha particle activity, radium and uranium data are from samples collected quarterly in 2023 for the required triennial monitoring (2023-2025). Radon is also monitored voluntarily with the triennial radionuclides. Helix - Radiological sampling last performed in 2021.

(g) Skinner - Compliance with the State and Federal MCLs is based on RAA or LRAA, as appropriate. Plant core locations for TTHM and HAA5 are service connections specific to each of the treatment plant effluents. Twin Oaks - TOVWTP met all provisions of the Stage 2 Disinfectants/Disinfection By-Products (D/DBP) Rule. Compliance was based on the LRAA. Average and range for the treatment plant effluent were taken from daily and monthly samples for TTHM and HAA5. Running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is 1 ppb.

(h) DLR = 0.5 ppb for each TTHM (bromoform, chloroform, dibromochloromethane and bromodichloromethane).

(i) 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.

(j) Twin Oaks - Running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is 1 ppb. Skinner - Compliance with the State and Federal MCLs is based on RAA or LRAA, as appropriate.

(k) Skinner - Metropolitan's TDS compliance data are based on flow-weighted monthly composite samples collected twice per year (April and October).

(l) Helix - Hexavalent chromium, boron and vanadium results are from 2023.

(m) Carlsbad - Boron analysis is included as seawater is a natural source for this constituent.

(n) AI is a calculated value that measures the aggressiveness of water transported through pipes. AI ≥ 12.0 = Non- aggressive water. AI (10.0 - 11.9) = Moderately aggressive water. AI ≤10.0 = Highly aggressive and very corrosive water. Skinner- AI ≥ 12.0 indicates non-aggressive water; AI 10.0-11.9 indicates moderately aggressive water; AI ≤ 10.0 indicates highly aggressive water. Reference: ANSI/AWWA Standard C400-93 (R98).

(o) SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate. Skinner - Positive SI indicates non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI indicates corrosive; tendency to dissolve calcium carbonate. Reference: Standard Method 2330.

(p) Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The Unregulated Contaminant Monitoring Rule (UCMR 5) monitoring period for Public Water Systems is 2023-2025. Padre Dam conducted UCMR 5 testing in 2023.