



PASADENA
Water & Power
SERVING THE COMMUNITY SINCE 1906

2017 Consumer Confidence Report

ON WATER QUALITY



MORRIS DAM,
SAN GABRIEL MOUNTAINS

Message from the General Manager

PASADENA WATER AND POWER (PWP) is pleased to present the **2017 Consumer Confidence Report on Water Quality** and inform that Pasadena's tap water meets all drinking water quality standards set by the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW).

In 2017, Assembly Bill (AB) 746 directed the State Water Resources Control Board to require that all water providers conduct lead testing of its drinking water at public schools.

Pasadena is proud that PWP took the initiative prior to the state mandate taking effect, and offered lead testing of its drinking water to all public and private schools K-12 within the PWP's service territory. See backside for more information.



Gurcharan Bawa
General Manager

For the upcoming year, PWP plans to update critical planning documents such as the Water System Master Plan and the Water Integrated Resource Plan, which serve as a key frameworks for identifying Pasadena's growing water needs, addresses maintenance for aging infrastructure, and helps ensure we obtain reliable, cost-effective and environmentally responsible water supplies.

Through education and a wide-range of incentives, PWP continues to encourage efficient water use. Drinking water is a precious and limited commodity, and we support embracing conservation as a "Way of Life."

To learn more about the quality of Pasadena's drinking water, visit PWPweb.com/WaterQuality.

Questions about your water?

PWP welcomes your comments, questions, and participation.

For information about this report, or your water quality in general, please contact:

David E. Kimbrough, Ph.D. (626) 744-3704 (in English),
or **Tony Estrada (626) 744-3838** (en Español).

Public comments are also welcomed at the weekly Pasadena City Council meetings, held every Monday at 6:30 p.m. at City Hall, 100 N. Garfield Avenue.

This report is available electronically at PWPweb.com/CCR2017. Previous years' reports and additional water quality information are available at PWPweb.com/WaterQuality.

If you would like a copy of this report mailed to you, please call **(626) 744-3704**.

Pasadena Citizen Service Center: (626) 744-7311

Water Waste Hotline

(626) 744-8888

ww5.CityofPasadena.net/citizen-service-center

Rebates and Conservation Tips

(626) 744-6970 • PasadenaSavesWater.com

Metropolitan Water District of Southern California

(213) 217-6000 • mwdh2o.com

State Water Resources Control Board, Division of Drinking Water

(818) 551-2004

[www.waterboards.ca.gov/drinking_water/certlic/
drinkingwater/publicwatersystems.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/publicwatersystems.shtml)

U.S. Environmental Protection Agency Safe Drinking Water Hotline

(800) 426-4791 • epa.gov/safewater

Hazardous Waste Disposal and Recycling

(888) CLEAN-LA • 888CleanLA.com

The Quality of Your Water is Our Priority

Your Water Supply

In 2017, PWP produced 26,890 acre-feet or 8.8 billion gallons of water, to serve nearly 169,000 consumers in Pasadena, portions of the unincorporated areas of Altadena, East Pasadena and San Gabriel. During the year, approximately 40 percent of the water supply was pumped from local groundwater, whereas 60 percent

came from imported surface water purchased from the Metropolitan Water District (MWD). Less than 1 percent was purchased from neighboring agencies that combine surface water and groundwater.

The Monk Hill Treatment Facility continues to operate and successfully remove perchlorate and volatile organic compounds from four groundwater wells in the northwest portion of Pasadena. The treatment system,

combined with continued conservation and strategic local supply planning, helped decrease Pasadena's reliance on imported water. PWP continues to explore all possible opportunities that will maximize use of local water supplies.

PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying the communities of Pasadena, Altadena La Cañada Flintridge, and portions of San Marino, Arcadia and Sierra Madre. Surface water from streams and precipitation enters the basin area through the natural water cycle. As surface water slowly percolates through the ground to the basin, the ground acts as a natural filter to strip the water of most contaminants. PWP's water is disinfected with chlorine and chloramines (chlorine plus ammonia) prior to being distributed the water to customers.

MWD is a consortium of 26 cities and water agencies that import water from the Colorado River and from Northern California, specifically through the State Water Project to serve nearly 19 million people in Southern California. MWD supplies PWP with water treated at the Weymouth Filtration Plant in La Verne. MWD also uses chloramines to disinfect its water.



Water Quality

To ensure that tap water is safe to drink, the USEPA and the DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Regulations set by the Food and Drug Branch of the Department of Public Health establish limits for contaminants in bottled water that provide the same protection for public health.

Drinking Water Contaminants

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's Safe Drinking Water Hotline, (800) 426-4791.

The sources of drinking water (both tap water 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 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 stormwater 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 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, agricultural application, and septic systems.
- **Radioactive contaminants** can be naturally-occurring or be the result of oil and gas production and mining activities.



Water Quality Issue that Could Affect Your Health

FEDERAL AND STATE REGULATIONS THAT IMPACT HEALTH & WATER QUALITY

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those 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 individuals 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, (800) 426-4791.



Fluoride

Your purchased water is fluoridated. MWD, which supplies about 60 percent of PWP's drinking water, adds fluoride to their water supply to the level of 0.6 to 1.0 parts per million (ppm). Before drinking water is delivered to your home or business tap, the fluoridated water is blended with PWP's groundwater. Since PWP's groundwater has naturally occurring fluoride levels of 0.5 to 1.5 ppm, the resulting concentration of fluoride is 0.4 to 1.4 ppm in our community drinking water, with an average of 0.8 ppm. At this range, fluoride has been proven to be effective in preventing tooth decay.

For more information about fluoridation, oral health, and current issues, please visit PWPweb.com/WaterQualityFAQ.

Lead and Copper

Under the Lead and Copper Rule (LCR), PWP tests the water at the tap of dozens of its customers every three years.

Most testing occurs at the source of drinking water, such as wells, streams, and lakes. LCR samples are collected at the tap because lead and copper are almost never found in source waters and they occur most frequently in tap water because of the corrosion of household fixtures, such as brass in faucets.



The results of our testing indicate that that the water being

tested does not exceed the Action Levels set in the LCR.

If you are concerned about the presence of lead or copper in your tap water, you can minimize the potential for lead exposure by flushing your tap for 5 seconds before using water for drinking or cooking.

Nitrates

Nitrate as N in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.



Hardness

Water becomes hard as it passes over or through certain geological formations that contain calcium or magnesium. For example, groundwater becomes hard as it percolates down to the water table through limestone deposits containing calcium, or through dolomite and other magnesium bearing minerals that dissolve into water. Surface water imported to Pasadena is hard because it has passed over similar formations as it flows hundreds of miles from the Colorado River and Northern California.

Hard water causes white, scaly deposits on plumbing fixtures, cooking utensils, and dishwashers. It reduces the cleaning power of soap and detergent and causes buildup in hot water heaters, thus reducing its effective lifetime.

PWP's water hardness ranges from 58 to 373 ppm or 3.4 to 64 grains per gallon. The average is approximately 170 ppm or 10 grains per gallon.

Though hardness causes aesthetic disadvantages, our bodies require calcium and magnesium and therefore there is no known negative health effect that is caused by hard water.

Lead Testing Available for Schools

The Division of Drinking Water (DDW), in collaboration with the California Department of Education, has taken the initiative to test for lead in drinking water at all public K-12 schools. In early 2017, DDW and Local Primacy Agencies issued amendments to the domestic water supply permits of approximately 1,200 community water systems, which includes PWP, so that schools that are served by a public water system could request assistance from their public water system to conduct water sampling for lead and receive technical assistance if an elevated lead sample is found. To further safeguard water quality in California's K-12 public schools, California Assembly Bill 746 published on October 12, 2017, effective January 1, 2018, requires community water system to test lead levels, by July 1, 2019, in drinking water at all California public, K-12 school sites that were constructed before January 1, 2010.



Any K-12 schools in PWP's service territory that are interested in participating in the testing program must submit a request by email to the Water Quality Manager at dkimbrough@CityofPasadena.net or by phone at (626) 744-3704. PWP has reached out to all known public and private schools K-12 grades within PWP's service territory and to date, has tested 34 schools.

To learn more, visit: PWPweb.com/LeadTesting.

PWP Plans Pasadena's Water Future

In 2018, PWP plans to update two critical planning documents, the Water System Master Plan and the Water Integrated Resource Plan.

The Water System Master Plan helps outline the framework of our water infrastructure to ensure we build, maintain and continue to deliver reliable water to the community. Further, the plan serves as a guideline for long term investments. Whereas, the Water Integrated Resource Plan is a blueprint for addressing Pasadena's growth, future water needs and how Pasadena will explore and procure water supply resources to meet our goals and achieve regulatory compliance.

Updating both plans concurrently will ensure there is greater synergy with maintaining our infrastructure and sustaining water supplies to meet Pasadena's growing needs.

To learn more, visit
PWPweb.com/WaterFuture



Important Information

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

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

Mahalaga ang impormasyon na nilalaman nito. Mangyaring ipasalin ito.

Այս գեղեցագիրը պարունակում է շատ կարևոր տեղեկություն Ձեր խմելու ջրի վերաբերյալ. Թարգմանեք կամ խոսացեք որևիցե անձի հետ որը կհասկանա գեղեցագիրը.

この情報は重要です。翻訳を依頼してください。

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。

यह सूचना महत्वपूर्ण है। कृपा करके किसी से सहायता अनुवाद कराएँ।

이 안내는 매우 중요합니다. 본인을 위해 번역인을 사용하십시오.

Данный рапорт содержит важную информацию о вашей питьевой воде. Переведите его или проконсультируйтесь с тем, кто его понимает.

City of Pasadena 2017 Groundwater and MWD Treated Surface Water Data

Parameter	MCL	PHG / MCLG / AL	DLR / MRL	Pasadena Treatment Plants		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Typical	Range	Typical	Range		
Primary Standard (Monitored for health concerns)									
Radiologicals (pCi/L)									
Gross Alpha Particle Activity	15	n/a	3	4.0	ND – 6.5	ND	ND	No	Erosion of natural deposits
Gross Beta Particle Activity ⁽¹⁾	50	n/a	4	4.4	3.2 – 6.1	ND	ND	No	Decay of natural and man-made deposits
Uranium	20	0.43	1	7.0	ND – 12	ND	ND	No	Erosion of natural deposits
Volatile Organic Compounds									
Tetrachloroethylene (PCE) (ppb)	5	0.06	0.5	ND	ND – 0.95	ND	ND	No	Discharge from factories, dry cleaners, and autoshops
Trichloroethylene (TCE) (ppb)	5	1.7	0.5	ND	ND – 0.73	ND	ND	No	Discharge from metal degreasing sites and other factories
Inorganic Compounds⁽²⁾									
Aluminum (ppb)	1000	600	50	ND	ND – 55	ND	ND – 210	No	Erosion of natural deposits
Arsenic (ppb)	10	0.004	2	ND	ND – 2.3	ND	ND	No	Erosion of natural deposits, runoff from orchards and industrials process
Barium (ppb)	1000	2000	100	ND	ND – 150	ND	ND	No	Erosion of natural deposits
Chromium (ppb)	50	100	0.2	3.8	0.8 – 8.8	ND	ND	No	Erosion of natural deposits
Chromium VI (ppb)	10	0.02	1	3.2	ND – 8.9	ND	ND	No	Erosion of natural deposits; industrial waste discharge
Fluoride (ppm)	2	1	0.1	0.8	0.5 – 1.5	0.7	0.5 – 0.9	No	Water additive for dental health; erosion of natural deposit
Nitrate as N (ppm)	10	10	0.4	4.0	ND – 8.0	ND	ND	No	Runoff and leaching from fertilizer use; erosion of natural deposits
Perchlorate (ppb)	6	1	4	ND	ND – 5	ND	ND	No	Industrial waste discharge
Secondary Standard (Monitored for aesthetic qualities such as taste, color, odor)⁽³⁾									
Chloride (ppm)	500	n/a	n/a	47.0	16.7 – 71.5	170	ND – 210	No	Runoff and leaching from natural deposits
Color (Units)	15	n/a	n/a	1.0	1.0 – 2.0	2	2	No	Naturally-occurring organic materials
Odor (Units)	3	n/a	1	1	1	3	3	No	Naturally-occurring organic materials
Specific Conductance (µS/cm)	1600	n/a	n/a	700.0	490 – 991	460	299 – 621	No	Substances that form ions when in water
Sulfate (ppm)	500	n/a	0.5	77.0	0.5 – 117.2	84	46 – 123	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1000	n/a	n/a	423.0	300 – 630	272	179 – 364	No	Runoff and leaching from natural deposits
Turbidity (NTU)	5	n/a	0.1	0.3	0.1 – 0.8	ND	ND	No	Soil runoff
Other Parameters									
Alkalinity (ppm)	n/a	n/a	n/a	150.0	70 – 200	57	43 – 71	No	n/a
Calcium (ppm)	n/a	n/a	n/a	64.0	37.4 – 95.8	24	14 – 35	No	n/a
Corrosivity (LSI)	n/a	n/a	n/a	0.20	-0.1 – 0.5	0.26	0.18 – 0.35	No	n/a
Magnesium (ppm)	n/a	n/a	n/a	18.0	8.5 – 32.5	11	6.2 – 16	No	n/a
pH (pH Units)	n/a	n/a	n/a	7.7	7.3 – 8.0	8.5	8.4 – 8.7	No	n/a
Potassium (ppm)	n/a	n/a	n/a	2.2	1.4 – 2.9	2.7	2.2 – 3.2	No	n/a
Sodium (ppm)	n/a	n/a	n/a	23.0	35.5 – 50	50	35 – 64	No	n/a
Total Hardness (ppm)	n/a	n/a	n/a	231.5	142 – 373	105	58 – 152	No	n/a

Understanding the Water Quality Chart

As in previous years, the Water Quality Report compares the quality of your tap water to state and federal drinking water standards. The report includes information on all regulated and unregulated drinking water contaminants that were detected during calendar year 2016. More than 100 regulated contaminants that were tested for, but not detected, are not included in this report. A number of regulated chemicals and other compounds do not require annual monitoring. Their most recent test results and corresponding test year are footnoted, if applicable. DDW allows PWP to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

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

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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

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

Detection Limits for Purposes of Reporting (DLR): The DLR is a parameter that is set by regulation for each reportable analyte. It is not laboratory specific and it is independent of the analytical

method used (in cases where several methods are approved). It is expected that a laboratory can achieve a Reporting Limit that is lower than or equal to the DLR set by the DDW. This is also known as the Minimum Reporting Level (MRL).

NA: Contaminant or property was not analyzed.

n/a: Not applicable.

ND: Contaminant was not detected. The contaminant is less than the DLR.

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

Units of Measurement:

ppm = parts per million **ppb** = parts per billion
ppt = parts per trillion **pCi/L** = picocuries per liter
LSI = Langelier Saturation Index
µS/cm = microsiemens per centimeter
NTU = Nephelometric Turbidity Units.

City of Pasadena Water Distribution System and MWD Treated Surface Water Data

Parameter	MCL	PHG / MCLG / AL	DLR / MRL	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Average (RAA)	Range	Average (RAA)	Range		
Disinfection By-Products and Disinfectant Residuals (D/DBP)⁽⁴⁾									
TTHM [Total Trihalomethanes] (ppb)	80	n/a	n/a	Highest Average (RAA) = 40	ND – 66.8	Highest Average (RAA) = 35	14 – 79	No	By-products of drinking water disinfection
HAA5 [Haloacetic Acids] (ppb)	60	n/a	n/a	Highest Average (RAA) = 31	ND – 31	Highest Average (RAA) = 13	6.4 – 22	No	By-products of drinking water disinfection
Total Chlorine Residual (ppm)	MRDL = 4	MRDLG = 4	n/a	Highest Average (RAA) = 2.02	ND – 2.07	Highest Average (RAA) = 2.4	1.1 – 3.1	No	Drinking water disinfectant added for treatment
Microbiological (%)									
Total Coliform Bacteria (%)	5	(0)	n/a	Highest Monthly Average = 0.74%	0 – 0.74	0.00	0	No	Naturally present in the environment

City of Pasadena Water Distribution System – Lead and Copper Levels at Residential Taps⁽⁵⁾

Parameter	AL	PHG	DLR / MRL	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				90th Percentile	Number of Sites Exceeding Action Level	90th Percentile	Number of Sites Exceeding Action Level		
Lead (ppb)	15	0.2	5	ND	0 out of 62	n/a	n/a	No	Internal corrosion of household water plumbing system
Copper (ppm)	1.3	0.3	0.05	0.35	0 out of 62	n/a	n/a	No	Internal corrosion of household water plumbing system

Federal Unregulated Contaminants Monitoring Rule (UCMR 3)⁽⁶⁾

Parameter	MCL	PHG / MCLG / AL	DLR / MRL	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Average	Range	Average	Range		
N-Nitrosodimethylamine – NDMA (ppt)	NA	3	2	ND	ND – ND	ND	ND – 6.0	NA	By-product of drinking water chlorination
Chlorate (ppb)	NA	NA		61	61 – 130	104	91 – 147	NA	By-product of drinking water chlorination & Industrial processes
Molybdenum (ppb)	NA	NA		12	ND – 16	NA	NA	NA	Naturally present in the environment
Strontium (ppb)	NA	NA		351	300 – 440	NA	NA	NA	Naturally present in the environment
Vanadium (ppb)	NA	NA		11	6.8 – 15	ND	ND	NA	Naturally present in the environment

Detection of Unregulated Contaminants⁽⁷⁾

Parameter	MCL	PHG / MCLG / AL	DLR / MRL	Pasadena Water System		MWD Weymouth Plant		MCL Violation	Typical Source of Contaminant
				Average	Range	Average	Range		
Hexavalent Chromium (ppb) ⁽⁸⁾	NA	0.02	1	3.2	ND – 8.9	ND	ND	No	Erosion of natural deposits; industrial waste discharge

Footnotes:

- 1) DDW considers 50 pCi/L to be the level of concern for beta particles. The results for Pasadena were taken in 2011-2013.
- 2) Aluminum, Arsenic, Barium, Chromium, and Chromium VI results were taken from Pasadena Well water collected in 2017.
- 3) There are no PHGs, MCLGs or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.
- 4) The MCL for TTHM and HAA5 and the MRDL for total chlorine residual are based on Running Annual Average (RAA).
- 5) Lead and Copper are based on triennial monitoring within residential taps. Results are based on 2017 monitoring.
- 6) Data from Pasadena Wells were collected in 2013 for Unregulated Chemical Monitoring Rule 3.
- 7) The previous MCL of 10 ppb was withdrawn on September 11, 2017. There is currently no MCL for hexavalent chromium.
- 8) There is currently no MCL for hexavalent chromium. The previous MCL of 0.010 mg/L was withdrawn on September 11, 2017.

For more information or questions about this report, or your water quality in general, please contact David E. Kimbrough, Ph.D. (626) 744-3704 (in English), or Tony Estrada (626) 744-3838 (en Español).

Save Money and Water: Learn How to Stop Leaks in Your Plumbing

Nationwide, more than 1 trillion gallons of water are lost annually due to household leaks. That's equal to the annual water use of more than 11 million homes. The average household can waste more than 10,000 gallons each year due to correctable leaks. That's enough to wash 270 loads of laundry!

Ten percent of homes have leaks that waste 90 gallons or more per day! Common sources include toilets, faucets, showerheads, and landscape irrigation. But you should also consider less obvious sources of leaks: water heaters, ice makers, dishwashers, and filtration systems. Many of these are easily correctable, and fixing them can save about 10 percent on the average water bill.



Be sure to check your toilet for leaks at least once a year. Put food coloring in the tank. If it seeps into the bowl without flushing, there's a leak. And if your toilet flapper doesn't close properly after flushing, replace it. Remember, one drip a second adds up to five gallons lost per day! So regularly check your faucets and showerheads, as well as all hoses and connectors.

Many household leaks can be solved with simple tools and a little education — and fortunately, Do-It-Yourselfers have access to multiple resources. But even if you must pay for repairs, you will still save money in the long run. For more information on water conservation, visit www.bewaterwise.com.