

Drinking Water Quality Report 2017

For the period of January 1
through December 31, 2017



Los Angeles
Department of
Water & Power

2017

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**A Message from
Andrew Linard**

Director of
Water Quality

Water Quality: A Continuous Process

LADWP employees work hard to make sure that Los Angeles has safe, high quality water. The construction, operation, and maintenance of our large and complex water system are critical to ensuring a continuous, reliable water service.

While our system delivered high quality water throughout 2017, unfortunately we experienced an incident on January 22, 2018 during the startup of the Los Angeles Aqueduct Filtration Plant following our annual maintenance shutdown. As you will read within this report, partially treated water intermittently entered the drinking water system over a period of nine hours. The incident was promptly reported to our regulator, the California State Water Resources Control Board, Division of Drinking Water. Based on their evaluation of the filtration and disinfection that the water received prior to distribution, the regulators determined that the incident was not an immediate threat to human health, was not an emergency, and did not require any action on the part of customers. We want you to know that we have taken

corrective action to ensure that this does not happen again. These include modification of our plant start-up procedures, enhanced training of our water treatment operators, and infrastructure improvements that include additional sensors and ultimately a new ultraviolet disinfection facility that is currently under construction.

We know that maintaining and preserving the confidence and trust of our customers, is critical to our responsibility of providing water to the city. As such, we welcome the opportunity to talk about the quality of water, whether it is over the phone, at a neighborhood event, at a policy briefing or on the news.

We want our customers to know: LADWP is not just your water company, but your neighborhood utility. You can count on us to provide reliable, quality service and to respond should you have concerns with your water—in your home, business, school or local park. L.A.'s water infrastructure is vast and we know issues can occur both within our system and in our customers' property pipes and fixtures. Should your experience at the end of the tap be not what you expect it to be, let us know right away! Pick up the phone or email us. Our staff is accessible, accountable and helpful, ready to promptly and safely work through any water concerns that you may have.

As the new Director of Water Quality, I will continue to uphold our commitment to putting our customers first and to continuously review procedures and protocols to improve upon them. Preserving your trust and confidence will always be at the forefront of our efforts to serve you.





**A Message from
Richard F. Harasick**

LADWP Senior
Assistant
General Manager,
Water System

A Strategic, Long Term Approach to Water Quality

LADWP continues to improve its operations and services every day, ensuring we meet our mission of providing safe, reliable, cost-effective drinking water to L.A. Looking to the future, we know that water quality, reliability, and supply are evolving issues due to new regulations, aging infrastructure, and dependence on imported water.

Water quality, of course, begins with a reliable source of water. Currently, the majority of our water comes from far away. In the long-term, we aim to reduce our purchased imported supplies as we source more local resources such as groundwater, stormwater, and recycled water, while reducing demand through water conservation. In addition, ongoing stormwater capture projects, such as enhancement of the Tujunga and Pacoima Spreading Grounds, will provide over 4.3 billion gallons of water annually. These major investments will help reduce reliance on imported water to source 50 percent of L.A.'s water supply locally by 2035.

Our efforts to modernize L.A.'s water infrastructure reached important milestones this past year as well. We brought four of our uncovered reservoirs into compliance with the Long Term 2 Enhanced Surface Water Treatment Rule. Compliance has been achieved either by covering the reservoir, removing it from service, or providing additional treatment to protect the drinking water. Silver Lake, Elysian, Santa Ynez Canyon, and Ivanhoe reservoirs have been completed and we are making progress on bringing the two remaining open reservoirs (Upper Stone Canyon and Los Angeles) into compliance. To address other regulations and improve the overall quality of our water, LADWP has entered the final phase to expand the use of chloramine to disinfect most of its water distribution system. The use of chloramine will improve taste and reduce any odors. Most importantly, it is a key method in reducing harmful disinfection byproducts.

In a system as large as ours, water quality depends on a modern, reliable distribution system. When our customers open the tap, they expect water to flow. LADWP replaced 184,000 feet of aging mainline pipe and 11,712 feet of large diameter trunk line pipes last year. This increased replacement rate has helped reduce the number of annual leaks in the system. Our long-term goal is to invest \$1 billion in infrastructure reliability over the next 10 years to replace 500 miles of leak-prone, high-risk mainlines throughout the city and achieve and sustain a 100-year replacement cycle.

LADWP has also pioneered the installation of flexible earthquake resistant pipes in the United States to provide even greater system reliability in the event of an earthquake. Over 13,000 feet of Earthquake Resistant Ductile Iron Pipe has been installed at five critical locations throughout Los Angeles. The largest installation to date, with 54-inch diameter pipe, began in 2018 along a two-mile stretch of the Foothill Trunk Line Replacement Project. This project is part of an important water artery leading into the city that crosses the San Fernando Fault in Sylmar.

The water system also includes large valves, pump stations, pressure regulators and relief stations and of course water meters. Functioning meters ensure accurate billing for the water our customers receive, so we are increasing our replacement rate to achieve a 20-year replacement cycle. This past year our crews replaced 27,500 meters.

LADWP has been providing the city with water service for over 100 years, and we are committed to continue doing so safely and reliably for many more years. The careful planning and cost-effective investments that we make today will continue to yield clean, refreshing, quality water well into the next century.

Where Does L.A. Get the Water It Needs?

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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.

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

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline: (800) 426-4791.



L.A.'s Water Sources in 2017



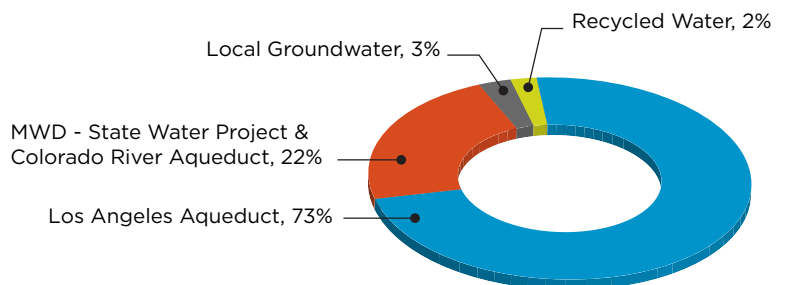
Important Notice

Precautions for the Special Needs Population

There are certain health conditions for which additional precautions on environmental exposures, including drinking water, would be advisable. Elderly customers and infants can be particularly at risk from infection as well as those with weakened immune systems, including individuals living with HIV/AIDS or other immune system disorders, those who may have undergone chemotherapy or those who have received organ transplants.

Customers concerned with these types of health challenges should seek advice from their health care providers about drinking tap water. Contact U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791, or visit www.epa.gov for free guidelines on how to reduce the risk of infection by cryptosporidium and other microbial contaminants.

Stormwater Capture, Local Groundwater, Recycled Water, and Conservation



Regulatory Compliance

How do we measure up?

LADWP works around the clock to ensure that the drinking water we deliver to our customers is of the highest quality and meets all safety requirements. Highly trained, certified treatment operators monitor our water treatment operations continuously, thereby helping meet federal and state standards for drinking water. In 2017, we tested for more than 200 constituents in the water and performed more than 125,900 tests on samples taken throughout our water system.

Notice of Violation of Drinking Water Regulations

Water quality is our top priority and we work around the clock to ensure that the drinking water we deliver to our customers is of the highest quality and meets all safety regulations. Water treatment facilities and treatment protocols were met year-round. However, on January 22, 2018, the Los Angeles Aqueduct Filtration Plant (LAAFP) experienced an operational issue that caused a portion of the water entering the distribution system to fall short of drinking water requirements. LADWP is notifying its customers in accordance with state drinking water notification regulations. The potentially impacted areas are in the north and northwest San Fernando Valley. The incident was not deemed an emergency and no action was required by customers at the time of the occurrence.

During the start-up of the LAAFP plant following the annual one-week maintenance shutdown, one of several treatment processes—contact with chlorine—was not sufficiently provided to a portion of the water drawn into the distribution system. During the time between 1:30 p.m. and 10:30 p.m. a portion of the treated water from the LAAFP did not meet the 99.99 percent virus inactivation criteria resulting in a violation of the Surface Water Treatment Rule. While not meeting the requirement, the water was treated with ozone, filtration and ultraviolet light—processes that serve as barriers to microbial pathogens. Total chlorine disinfection residual was also maintained in the supply entering the system at all times.

Maintaining the highest water quality is of the utmost importance to us here at LADWP and we have revised our facility operating and training procedures to ensure that a similar incident does not occur again. This includes continuous monitoring of all critical points during the start-up process, ensuring chlorine disinfectant is added and contact time is adequate before any filtration plant supply enters the distribution system. Longer term completion of the new Los Angeles Reservoir Ultraviolet Disinfection Plant will enable valves to be used as additional physical barriers during the start-up process.

For questions regarding this citation, call the Water Quality Division directly at (213) 367-3182 or visit www.ladwp.com/waterquality/Tier2TreatmentViolation.

Please share this information with all other people who drink the water, especially those who may not have received this public notice directly (for example, people in apartments, nursing homes, schools, and businesses).

People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from U.S. EPA's Safe Drinking water Hotline at (800) 426-4791.

Voluntary Lead Testing of Drinking Water at California Public and Private K-12 Schools

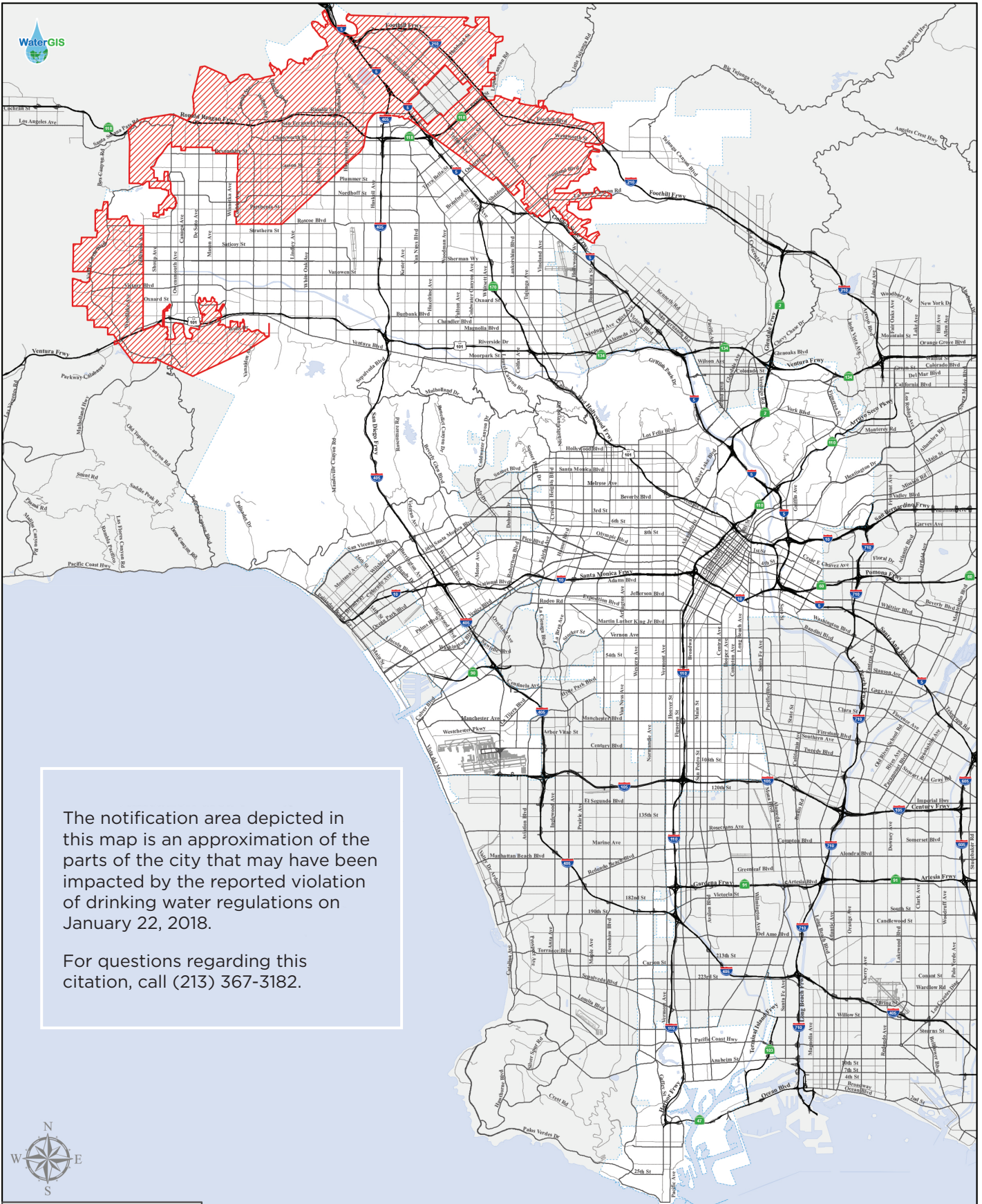
In January 2017, the California Division of Drinking Water amended LADWP's domestic water supply permit to include a new voluntary program to test for lead in drinking water at California public and private K-12 schools within our service area. Schools interested in participating in this program can find out more information at www.ladwp.com/waterquality under **Water Quality in the News, Lead Testing for Los Angeles Schools**. Written requests will be accepted until November 1, 2019.

Upon receiving a written request, LADWP will contact the school and schedule a site visit to assist in developing a sampling plan. A maximum of five onsite locations that are regularly used for drinking or cooking can be selected for sampling. A trained school employee will collect samples at the school and LADWP water quality staff will pick up and deliver them to LADWP's certified Water Quality Laboratory for testing. All test results will be reported to the school and to the State. If a sample test result is above the lead action level of 15 µg/L, it will be reported to the school within two business days and the location will be resampled within 10 business days. If a sample test result is below the lead action level of 15 µg/L, it will be reported to the school within 10 business days.

Currently, LADWP has received and processed 23 requests from schools. The breakdown of the samples results are as follows:

Total Samples Tested: 53
Non-Detect Results: 48
Above Action level: 0
Maximum Result: 3.5 µg/L
Average Result: 0.22 µg/L

For questions regarding this program, contact Thomas Dailor at (213) 367-0921.



The notification area depicted in this map is an approximation of the parts of the city that may have been impacted by the reported violation of drinking water regulations on January 22, 2018.

For questions regarding this citation, call (213) 367-3182.



 Notification Area

 LADWP Service Area

Streets: Thomas Brothers



Water Quality Notification Area
 January 22, 2018

AB 746 Requires Lead Testing in California Public K-12 Schools

Effective January 1, 2018, California Assembly Bill 746 requires community water systems to test for lead in drinking water at California public K-12 schools within their service area by July 1, 2019. This new law complements the existing voluntary lead testing in schools program that began in early 2017. Under the new lead testing program, all public K-12 schools must participate in lead testing unless they can show that their school was constructed or their plumbing was replaced after December 31, 2009, and that they have conducted equivalent lead testing after January 1, 2009 and posted the results on their website.

In an effort to facilitate lead testing under this new program, LADWP will be contacting public K-12 schools within its service area that may potentially qualify. For questions regarding this new program, contact Thomas Dailor at (213) 367-0921.

Assessment Programs for Surface and Groundwater Sources

Purchased Supplies

The Metropolitan Water District of Southern California (MWD) receives and treats water from the State Water Project and the Colorado River that is then delivered to Los Angeles customers. Three of the five MWD treatment plants, F.E. Weymouth, Robert B. Diemer and Joseph Jensen, supply water to the Los Angeles area. MWD tests its water for nearly 400 constituents and performs about 250,000 water quality tests per year on samples gathered from its vast distribution system. Analyses of these samples are undertaken at MWD's state-of-the-art water quality laboratory. Results are provided to LADWP and are included in this report on Tables I, II and III (see pages 12-16).

Safeguarding Our Surface Water

Administered by the State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW), the Surface Water Treatment Rule (SWTR) is a set of drinking water regulations that establish specific treatment requirements for surface water to reduce the risk of waterborne diseases. In Los Angeles, the SWTR applied to four of 10 uncovered reservoirs: Lower Stone Canyon, Encino, and Upper and Lower Hollywood. We successfully met the compliance deadlines and treatment requirements for all four reservoirs.

The last update to the SWTR is the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). This rule protects treated water reservoirs from microbiological contamination by requiring one of three actions: 1) covering, 2) removing from service, or 3) providing additional treatment. LT2 is also applied to then six remaining uncovered reservoirs: Los Angeles, Upper Stone Canyon, Santa Ynez, Ivanhoe, Silver Lake, and Elysian.

On March 31, 2009, a compliance agreement for LT2 was executed between LADWP and SWRCB-DDW. We are working diligently to bring all reservoirs into compliance as quickly as possible and will do so by the specified date in the compliance agreement.

Ivanhoe Reservoirs: An extension for additional work necessary to isolate Ivanhoe Reservoir has been granted due to unexpected delays in the commissioning of Headworks East Reservoir, which replaces Ivanhoe's storage capacity. Headworks East Reservoir came online in December 2014 and the construction of Headworks West Reservoir began in 2015. The Headworks Reservoir complex will provide the necessary system reliability when completed in late 2018 to allow Ivanhoe Reservoir to be removed from service.

Upper Stone and Elysian Reservoirs: In January 2012, the Board approved the Final Environmental Impact Report for a floating cover on Upper Stone Canyon Reservoir and followed with a similar action in April 2012 for the Elysian Reservoir. Upper Stone Canyon's final design was completed and the construction bid was issued in September 2016; Elysian Reservoir was removed from service in December 2015 and construction of the Elysian Reservoir cover was completed in February 2018.

Los Angeles Reservoir: Los Angeles Reservoir remains in service. The "shading" of the reservoir was completed in 2015 when the last of approximately 96 million shade balls were deployed to control disinfection byproducts and algae. The new Los Angeles Reservoir Ultraviolet Disinfection Plant will be built to meet LT2 requirements for the water leaving the reservoir. Design of the UV facility has been completed and construction began in 2017; it will be completed in 2022.

Go to www.ladwp.com/waterquality to learn more about water quality projects and issues.



About 96 million shade balls cover Los Angeles Reservoir to protect against disinfection byproducts and algae.

Water Quality Service Areas in Los Angeles

San Fernando Valley Communities

Sources: Los Angeles Aqueduct, local groundwater, and MWD State Water Project

Arleta	Panorama City	Warner Center
Canoga Park	Porter Ranch	West Hills
Chatsworth	Reseda	Winnetka
Encino	Sherman Oaks	Woodland Hills
Granada Hills	Studio City	
Hollywood Hills	Sun Valley	
Lake View Terrace	Sunland	
Mission Hills	Sylmar	
North Hills	Tarzana	
North Hollywood	Toluca Lake	
Northridge	Tujunga	
Olive View	Valley Village	
Pacoima	Van Nuys	

Western Los Angeles Communities

Sources: Los Angeles Aqueduct and MWD State Water Project

Bel Air Estates	Palisades Highlands
Beverly Glen	Palms
Brentwood	Playa del Rey
Castellamare	Sawtelle
Century City	Venice
Cheviot Hills	West Los Angeles
Culver City*	Westchester
Mar Vista	Westwood
Pacific Palisades	

Eastern Los Angeles Communities

Sources: MWD State Water Project and Colorado River Aqueduct

Atwater Village	Echo Park	Lincoln Heights
Boyle Heights	El Sereno	Montecito Heights
Cypress Park	Glassell Park	Monterey Hills
Eagle Rock	Highland Park	Mt. Washington

Central Los Angeles Communities

Sources: Los Angeles Aqueduct, MWD State Water Project, and local groundwater

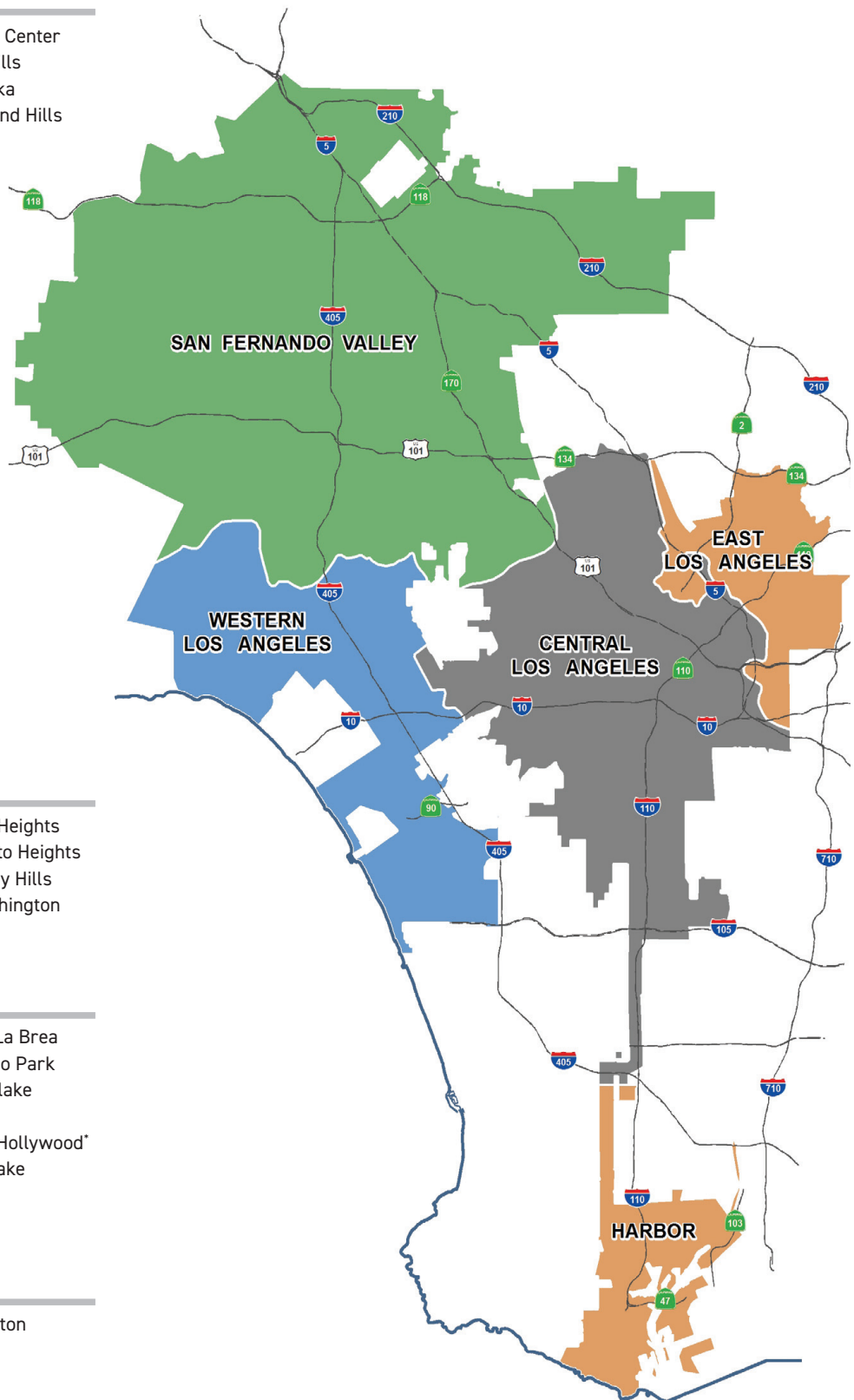
Baldwin Hills	Hyde Park	Park La Brea
Chinatown	Koreatown	Rancho Park
Country Club Park	L.A. City Strip*	Silverlake
Crenshaw	Little Tokyo	Watts
Griffith Park	Los Feliz	West Hollywood*
Hancock Park	Mid City	Westlake
Hollywood	Mt. Olympus	

Harbor Communities

Sources: MWD State Water Project and Colorado River Aqueduct

East San Pedro	Harbor Gateway*	Wilmington
(Terminal Island)	L.A. City Strip*	
Harbor City	San Pedro	

*Portions of



Terms Used in the Tables

Compliance: A drinking water standard based on the health risk (primary standards) and aesthetic (secondary standards) exposure of a contaminant to consumers. For example, bacteria and nitrate have strict limits that must be met at all times due to the acute effects they can cause. Other standards, like small amounts of disinfection by-products and man-made chemicals, have standards that are based on a lifetime of exposure because the risk to consumers is very low. Compliance with most standards is based on an average of samples collected within a year. This allows for some fluctuation above and below the numerical standard, while still protecting public health.

Federal Action Level (AL): Concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. ALs are set by U.S. Environmental Protection Agency (U.S. EPA).

Federal Minimum Reporting Level (MRL): Minimum concentration of a contaminant which can be detected in drinking water using analytical methods established by the U.S. EPA. Data reported in Table IV reflect MRLs.

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

Maximum Residual Disinfectant Level (MRDL): 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): Level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the beneficial use of disinfectants to control microbial contaminants. MRDLGs are set by U.S. EPA.

Notification Level (NL): Health-based advisory level established by SWRCB-DDW for chemicals in drinking water that lack MCLs.

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

Public Health Goal (PHG): 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, Office of Environmental Health Hazard Assessment (OEHHA).

Secondary Maximum Contaminant Level (SMCL): Highest level a constituent allowed in drinking water that may affect the taste, odor or appearance. SMCLs are set by the U.S. EPA.

State Detection Limit (DLR): A detected contaminant at or above its detection level for reporting purposes. DLRs are set by the SWRCB-DDW. Data reported in Tables I through III reflect DLRs.

State Maximum Contaminant Level (MCL): Highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) or Maximum Contaminant Level Goals (MCLGs) as is economically and technologically feasible. For certain contaminants, compliance with MCL is based on the average of all samples collected throughout the year.

Treatment Technique (TT): Required process intended to reduce the level of a contaminant in drinking water. For example, the filtration process is a treatment technique used to reduce turbidity (cloudiness in water) and microbial contaminants from surface water. High turbidities may be indicative of poor or inadequate filtration.

Table I Calendar Year 2017 Water Quality Monitoring Results
Health-based Primary Drinking Water Standards (MCLs)
Substances Detected in Treated Water

Substances	Major Sources in Drinking Water	Units	Meets Primary Standard (YES / NO)	State Primary Standard MCL	State PHG
Arsenic	Erosion of natural deposits	µg/L	YES	10	0.004
Barium	Erosion of natural deposits	µg/L	YES	1000	2000
Bromate (b)	By-product of ozone disinfection; formed under sunlight for chlorinated water	µg/L	YES	10	0.1
Fluoride	Erosion of natural deposits; water additive that promotes strong teeth	mg/L	YES	2	1
Gross Alpha Particle Activity (c)	Naturally present in the environment	pCi/L	YES	15	0
Gross Beta Particle Activity (c)	Naturally present in the environment	pCi/L	YES	50	0
Heterotrophic Plate Count Bacteria	Naturally present in the environment	CFU/mL	YES	TT	none
Nitrate (as N)	Erosion of natural deposits; runoff and leaching from fertilizer use	mg/L	YES	10	10
Nitrate + Nitrite (as N)	Erosion of natural deposits; runoff and leaching from fertilizer use	mg/L	YES	10	10
Total Organic Carbon (TOC)	Erosion of natural deposits	mg/L	YES	TT	none
Trichloroethylene (TCE)	Discharge from metal degreasing sites and other factories	µg/L	YES	5	1.7
Turbidity (d)	Soil runoff	NTU	YES	TT = 1	none
		%		TT = 95% of samples ≤0.3 NTU	
Uranium (c)	Erosion of natural deposits	pCi/L	YES	20	0.43

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. HRAA may be higher than the range, which is based on the test data in the reported calendar year.

(b) Bromate is formed in water treated with ozone in the presence of bromide. Bromate has also been found in water treated with chlorine in some uncovered reservoirs in LADWP that have elevated bromide levels and are exposed to sunlight. MWD tests for bromate at its Diemer and Jensen Filtration Plants, which use ozone. Weymouth Plant has tested for bromate for less than 12-month period and so RAA is not calculated. All LADWP distribution reservoirs are now shielded with flexible covers or shade balls to minimize bromate formation.

Table I

Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
<50	<50	<50	<50	<50	<50	170 (a)	<50 - 210	159 (a)	<50 - 130	89 (a)	<50 - 120
4 (a)	<2 - 5	2	<2 - 4	<2	<2 - 4	<2	<2	<2	<2	<2	<2 - 2.4
<100	<100	<100	<100	<100	<100 - 106	<100	<100	<100	<100	<100	<100
3 (a)	<1 - 3	1	<1 - 3	1	<1 - 3	NA (b)	2.6 - 5.0	2.3 (a)	<1 - 5.8	7.4 (a)	3.3 - 8.9
0.8	0.7 - 0.9	0.8	0.7 - 1.0	0.8	0.7 - 0.9	0.7	0.5 - 0.9	0.7	0.6 - 0.9	0.7	0.6 - 0.8
<3	<3	4	<3 - 4	4	<3 - 4	<3	<3	<3	<3	<3	<3 - 3
6	5 - 6	5	5 - 7	5	<4 - 7	<4	<4	<4	<4	<4	<4
<1	<1 - 121	<1	<1 - 200	<1	<1 - 2	<1	<1 - 1	<1	<1 - 1	<1	<1 - 1
<0.4	<0.4	1	<0.4 - 3	0.6	<0.4 - 5	<0.4	<0.4	<0.4	<0.4	0.6	0.6
<0.4	<0.4	1	<0.4 - 3	0.6	<0.4 - 5	NR	NR	NR	NR	NR	NR
1.9	1.5 - 2.7	1.8	1.5 - 2.7	1.8	0.3 - 2.5	2.5 (a)	2.0 - 2.9	2.4 (a)	1.8 - 3.0	2.5 (a)	2.3 - 3.1
<0.5	<0.5	<0.5	<0.5 - 1	<0.5	<0.5 - 1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
0.97	NA	NA	NA	NA	NA	0.04	NA	0.08	NA	0.06	NA
100%						100%		100%			
4	<1 - 5	3	<1 - 6	3	<1 - 6	<1	<1	<1	<1	<1	<1 - 1

(c) Radiological monitoring is performed in cycles of various frequencies in LADWP for treated sources water and at the blend points. Monitoring for Gross Alpha Particle Activity is performed in six year cycle and was conducted in 2016. Monitoring of Combined Radium-226 and Radium-228 is performed in three year cycle and was conducted in 2016. Monitoring of Gross Beta Particle Activity Strontium-90, Tritium and Uranium is performed annually. MWD conducted all radiological monitoring in 2014.

(d) Turbidity is a measure of the cloudiness of water and is a good indicator of water quality and filtration performance. High turbidity can hinder the effectiveness of disinfectants. The Primary Drinking Water Standard for turbidity (included in this table) at water filtration plants is less than or equal to 0.3 NTU in at least 95 percent of the measurements taken in any month and shall not exceed 1.0 NTU at any time. The reporting requirement for treatment plant turbidity is to report the highest single measurement in the calendar year as well as the lowest monthly percentage of measurements that are less than or equal to 0.3 NTU.

Table I

Calendar Year 2017 Water Quality Monitoring Results
Table I (cont'd) – Health-based Primary Drinking Water Standards (MCLs)
 Substances Detected in Treated Water and Reported on City-Wide Basis

Substances	Major Sources in Drinking Water	Units	Meets Primary Standard (YES/NO)
Bromate (uncovered reservoirs)	By-product of ozone disinfection; formed under sunlight for chlorinated water	µg/L	YES
Chlorine Residual, Total	Drinking water disinfectant added for treatment	mg/L	YES
Copper (at-the-tap) AL = 1300 (e)	Internal corrosion of household water plumbing systems	µg/L	YES
Fluoride	Erosion of natural deposits; water additive that promotes strong teeth	mg/L	YES
Haloacetic Acids (Five) (HAA5)	By-product of drinking water disinfection	µg/L	YES
Lead (at-the-tap) AL = 15 (e)	Internal corrosion of household water plumbing systems	µg/L	YES
Total Coliform Bacteria	Naturally present in the environment	% Positives	YES
Total Trihalomethanes (TTHM)	By-product of drinking water chlorination	µg/L	YES

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. HRAA may be higher than the range, which is based on the test data in the reported calendar year.

Table II

Calendar Year 2017 Water Quality Monitoring Results
Aesthetic-based Secondary Drinking Water Standards (SMCLs)
 Substances Detected in Treated Water

Substances	Major Sources in Drinking Water	Units	Meets Secondary Standard (YES/NO)	State SMCL or Federal (SMCL)	Los Angeles Aqueduct Filtration Plant	
					Average	Range
Aluminum	Erosion of natural deposits; residue from some surface water treatment processes	µg/L	YES	200	<50	<50
Chloride	Runoff / leaching from natural deposits; seawater influence	mg/L	YES	500	31	18 - 42
Color, Apparent (unfiltered)	Naturally-occurring organic materials	ACU	YES	15	3	3 - 4
Odor	Naturally-occurring organic materials	TON	YES	3	<1	<1
pH	Naturally-occurring dissolved gases and minerals	Unit	YES	(6.5 - 8.5)	7.6	6.9 - 8.7
Specific Conductance	Substances that form ions when in water; seawater influence	µS/cm	YES	1600	346	180 - 670
Sulfate (as SO4)	Runoff / leaching from natural deposits	mg/L	YES	500	26	15 - 35
Total Dissolved Solids (TDS)	Runoff / leaching from natural deposits	mg/L	YES	1000	208	136 - 267
Turbidity (g)	Soil runoff	NTU	YES	5	<0.1	<0.1

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. Hence, HRAA may be higher than the range, which is based on the test data in the reported calendar year.

Table I

State Primary Standard MCL or (MRDL)	State PHG or (MRDLG)	Average	Range
10	0.1	HRAA = 3 (a)	Range = <1 - 4
(4)	(4)	HRAA = 2.0 (a)	Range = 1.7 - 2.2
TT	300	90th Percentile value = 579	Number of samples exceeding AL = 1 out of 103
2	1	Average = 0.8	Range = 0.4 - 1.2
60	none	HLRAA = 22 (f)	Range = 3 - 37
TT	0.2	90th Percentile value = 6.3	Number of samples exceeding AL = 3 out of 103
≤5% of monthly samples are coliform positive	0	Highest monthly % positive samples = 1.5%	Range of monthly positive samples = 0.3% - 1.5%
80	none	HLRAA = 50 (f)	Range = 8 - 57

(e) At-the-tap monitoring of lead and copper is conducted as required by the federal Lead and Copper Rule. A system is out of compliance if the federal Action Level is exceeded in more than 10 percent of all samples collected at the customers' tap. The most recent monitoring was conducted in 2015. Although the City's treated water has little or no detectable lead, studies were conducted and corrosion control implementation started. A small corrosion control facility utilizing zinc orthophosphate (temporarily out of service for upgrades) has been in operation in the Watts area since the 1990's. Corrosion control was introduced to the Western Los Angeles area in 2010 and to the Hollywood area in 2015. Corrosion control will be expanded to the rest of the City by 2020.

(f) The federal Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2 D/DBPR) requires compliance monitoring and reporting for total trihalomethanes (TTHM) and five haloacetic acids (HAA5) based on Locational Running Annual Averages (LRAAs) of established monitoring locations. The Highest Locational Running Annual Averages (HLRAAs) of all LRAAs in the current calendar year for TTHM and HAA5 are reported.

Table II

Northern Combined Wells		Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
<50	<50	<50	<50	170 (a)	<50 - 210	159 (a)	<50 - 130	89 (a)	<50 - 120
34	20 - 66	34	20 - 59	48	29 - 66	50	34 - 66	84	74 - 94
3	3 - 4	3	3 - 4	2	2	1	1	2	1 - 2
<1	<1 - 1	<1	<1 - 1	3	3	2	2	2	2
7.9	7.1 - 9.2	7.9	7.2 - 9.2	8.5	8.4 - 8.7	8.4	8.2 - 8.6	8.3	8.2 - 8.3
380	170 - 760	380	180 - 760	460	299 - 621	490	351 - 630	592	557 - 626
32	13 - 81	32	13 - 113	84	46 - 123	96	65 - 127	70	61 - 78
216	122 - 393	216	122 - 481	272	179 - 364	294	213 - 374	344	316 - 373
0.2	<0.1 - 0.5	<0.1	<0.1 - 0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

(g) The Secondary Maximum Contaminant Level for turbidity of treated water in the distribution system is 5 NTU at the entry points to the distribution system.

Table III Calendar Year 2017 Water Quality Monitoring Results
Unregulated Drinking Water Substances Detected in Treated Water

Table III

Substances	Major Sources in Drinking Water	Units	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells	
			Average	Range	Average	Range
Alkalinity, Total (as CaCO3)	Erosion of natural deposits	mg/L	105	65 - 134	105	56 - 154
Ammonia + Chloramines (as N)	Drinking water disinfectant added for treatment	mg/L	0.5	0.4 - 0.6	0.5	0.3 - 0.6
Bicarbonate Alkalinity (as CaCO3)	Naturally-occurring dissolved gas; erosion of natural deposits	mg/L	105	65 - 134	105	56 - 154
Boron NL = 1000	Erosion of natural deposits	µg/L	546	249 - 833	465	197 - 883
Bromide	Runoff / leaching from natural deposits; seawater influence	µg/L	24	<20 - 36	34	<20 - 135
Calcium	Erosion of natural deposits; natural hot springs	mg/L	24	19 - 29	27	16 - 48
Chromium, Hexavalent	Industrial discharge; erosion of natural deposits	µg/L	<0.1	<0.1	0.1	<0.1 - 0.3
Hardness, Total (as CaCO3)	Erosion of natural deposits	mg/L	84	62 - 106	95	52 - 187
Lithium	Erosion of natural deposits	µg/L	47	47	NT	NT
Magnesium	Erosion of natural deposits	mg/L	6	4 - 8	7	3 - 16
Phosphate (as PO4)	Erosion of natural deposits, agricultural run-off	µg/L	<31	<31 - 52	<31	<31 - 104
Potassium	Erosion of natural deposits	mg/L	5	3 - 6	4	3 - 7
Silica (as SiO2)	Erosion of natural deposits	mg/L	16	14 - 19	16	13 - 22
Sodium	Erosion of natural deposits	mg/L	40	19 - 56	38	16 - 63
Temperature	Natural seasonal fluctuation	°C	18	9 - 28	19	11 - 29
Total Coliform	Naturally present in the environment	NUM/100mL	<1	<1 - 17	<1	<1 - 2
Vanadium	Erosion of natural deposits	µg/L	<3	<3	<3	<3

Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
Average	Range	Average	Range	Average	Range	Average	Range
105	56 - 194	57	43 - 71	61	48 - 74	86	85 - 86
0.5	0.3 - 0.6	NA	NA	NA	NA	NA	NA
105	56 - 194	NA	NA	NA	NA	NA	NA
465	<100 - 714	110	110	100	100	190	190
34	<20 - 132	NA	NA	NA	NA	NA	NA
27	16 - 76	24	14 - 35	28	20 - 36	27	27
0.1	<0.1 - 0.3	<1	<1	<1	<1	<1	<1
95	52 - 262	105	58 - 152	119	82 - 156	119	118 - 120
65	65	NA	NA	NA	NA	NA	NA
7	3 - 21	11	6 - 16	12	8 - 16	13	12 - 14
<31	<31 - 570	NA	NA	NA	NA	NA	NA
4	3 - 7	3	2 - 3	3	2 - 3	3	3.1 - 3.2
16	12 - 25	NA	NA	NA	NA	NA	NA
38	16 - 61	50	35 - 64	51	39 - 63	69	58 - 80
19	11 - 29	NA	NA	NA	NA	NA	NA
<1	<1 - 2	NA	NA	NA	NA	NA	NA
<3	<3	<3	<3	<3	<3	4	4

Table IV Calendar Year 2017 Water Quality Monitoring Results
The Third U.S. EPA Unregulated Contaminant Monitoring Rule (UCMR3)
Substances Detected In Treated Water

Table IV

Substances	Units	Meets MCL or NL (YES / NO)	State Primary Standard MCL or (NL)	State PHG or Federal (MCLG)
1,1-Dichloroethane (1,1-DCA)	µg/L	YES	5	3
1,4-Dioxane	µg/L	YES	(1)	NA
Bromochloromethane	µg/L	NA	NA	NA
Chlorate	µg/L	YES	(800)	NA
Chlorodifluoromethane	µg/L	NA	NA	NA
Chromium, Hexavalent (CrVI)	µg/L	YES	10	0.02
Chromium, Total (Total Cr)	µg/L	YES	50	(100)
Molybdenum	µg/L	NA	NA	NA
Strontium	µg/L	NA	NA	4,000 (h)
Vanadium	µg/L	YES	(50)	NA

Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells	
Average	Range	Average	Range	Average	Range
<0.03	<0.03	<0.03	<0.03 - 0.04	<0.03	<0.03 - 0.04
<0.07	<0.07	0.4	<0.07 - 0.9	0.4	<0.07 - 0.9
<0.06	<0.06	<0.06	<0.06 - 0.1	<0.06	<0.06 - 0.9
<20	<20	130	<20 - 296	130	<20 - 186
0.18	<0.08 - 0.7	<0.08	<0.08 - 0.4	<0.08	<0.08 - 0.14
0.2	0.1 - 0.4	1	0.2 - 1.6	1	<0.03 - 3.3
0.2	<0.2 - 0.4	1	0.2 - 1.5	1	<0.2 - 3.2
5	3 - 7	7	3 - 9	7	3 - 10
242	225 - 279	432	255 - 550	432	259 - 934
1.6	1 - 2	2.2	1.4 - 3.3	2.2	<0.2 - 2.7

(h) Health-based Advisory Level recommended by U.S. EPA.

2017 Drinking Water Quality Monitoring Results

Tables I-III list the results of water tests performed by LADWP and MWD from January to December 2017. LADWP tests for over 200 substances. These tables include only substances with values that are detected.

Unregulated Contaminant Monitoring Rule

The Unregulated Contaminant Monitoring Rule (UCMR) is a special program developed by the U.S. Environmental Protection Agency (U.S. EPA) that requires public water systems to survey up to 30 selected contaminants of emerging concern (CECs) once every five years. LADWP conducted the third UCMR (UCMR3) monitoring in 2013 and 2014. Values in this report reflect the sum of all tests. The data is reported for five years. Results indicate that most of the contaminants were not detected at the very low Minimum Reporting Levels (MRL) required by U.S. EPA for UCMR3 analyses. Of the contaminants that were detected (see Table IV on page 16), chlorate and strontium were in significant but expected concentrations.

LADWP routinely tests for and detects chlorate in the distribution system. Chlorate is a disinfection byproduct of chlorination. It is unregulated, although the SWRCB-DDW has set a notification level of 800 mg/L. UCMR3 test results for chlorate were much lower, ranging from not detected to 296 mg/L.



How to Read the Tables

The substances found in the water served in your area are listed as follows:

- For San Fernando Valley Area - water test results are under the Los Angeles Aqueduct Filtration Plant, the Northern Combined Wells, and MWD Jensen Filtration Plant columns
- For Western Los Angeles Area - water test results are under the Los Angeles Aqueduct Filtration Plant column
- For Central Los Angeles Area - water test results are under the Los Angeles Aqueduct Filtration Plant and the Southern Combined Wells columns
- For Harbor/Eastern Los Angeles Area - water test results are under the MWD Jensen, Weymouth, and Diemer Filtration Plants columns

Some substances are reported on a citywide basis as required by the SWRCB-DDW.

Abbreviations

ACU = apparent color unit

CFU/mL = colony-forming unit per milliliter

< = less than the detection limit for reporting purposes

µg/L = micrograms per liter (equivalent to ppb)

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter (equivalent to ppm)

NTU = nephelometric turbidity units

NA = not applicable

NR = not reported

NT = not tested

NUM/100 mL = number per 100 milliliter

% = percentage

pCi/L = picoCuries per liter

TON = threshold odor number



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General Information

This annual Drinking Water Quality Report (also known as a Consumer Confidence Report) is required by the California State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW) and is prepared in accordance with their guidelines. The report is available online at www.ladwp.com/waterqualityreport. Copies may be requested by calling (213) 367-3182.

LADWP, the largest municipal utility in the nation, was established more than 100 years ago. The utility now provides a reliable and safe water and electric service to the city's more than 4 million residents and businesses. LADWP is governed by a five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council. The Board meets regularly on the second and fourth Tuesdays of each month at 10:00 a.m.

Meetings are held at:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1555H
Los Angeles, CA 90012-2694

The meeting agenda is available to the public on the Thursday prior to the week of the meeting. You can access the Board agenda at www.ladwp.com/board or by calling (213) 367-1351.

For general information about LADWP, call (800) DIAL-DWP or visit www.ladwp.com.

For questions regarding this report, call the Water Quality hotline at (213) 367-3182.

Want to know more about your drinking water and related regulations?

Los Angeles Department of Water and Power
www.ladwp.com

California State Water Resources Control Board,
Division of Drinking Water (SWRCB-DDW)
www.waterboards.ca.gov/drinking_water/programs

U.S. Environmental Protection Agency (U.S. EPA)
www.epa.gov/safewater

LADWP's website has a wealth of information specific to improving water quality in your home. If you have specific water quality questions or problems, call (800) DIAL-DWP or visit www.ladwp.com/waterquality.

For more information on home water filters, visit www.consumerreports.org/cro/water-filters.

For more information about the NSF certification, call (800) 673-6275 or visit www.nsf.org.

For more information about SWRCB-DDW certification of home water filters, call (916) 449-5622 or visit www.waterboards.ca.gov/drinking_water/certlic/device/watertreatmentdevices.shtml.

This Message is for Non-English Speaking LADWP Customers

This report contains important information about your drinking water. If you have any questions regarding this report, contact us at (800) 342-5397.

Spanish

Este informe contiene información importante sobre su agua potable. Si tiene alguna pregunta sobre este informe, por favor comuníquese con nosotros llamando al (800) 342-5397.

Arabic

”هذا التقرير يحتوي على معلومات مهمة تتعلق بمياه الشفة (أو الشرب).
ترجم التقرير، أو تكلم مع شخص يستطيع أن يفهم التقرير.“

Armenian

Այս հաշվետվությունը պարունակում է կարևոր
տեղեկատվություն ձեր խմելու ջրի մասին:
Թարգմանե՛ք այն, կամ խոսե՛ք զրի մեկի հետ, ով
հասկանում է զրա բովանդակությունը:

Croatian

Ovo izvješće sadrži važne informacije o vašoj vodi za piće.
Neka ga neko prevede ili razgovarajte s nekim tko ga je u stanju pročitati.

Chinese

此份有關您的飲用水質報告，內有重要資料和訊息。
假如您對此報告有任何疑問，請找人為您翻譯及解釋清楚。

Farsi (Persian)

این اطلاعات شامل اطلاعات مهمی راجع به آب آ شامیدنی
است. اگر تمیبتوانید این اطلاعات را ب زبان انگلیسی
بخوانید لطفاً کسی که میتواند بیاری بگیرید تا مطالب ر
ایرای 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.

German

Dieser Bericht enthält wichtige Information über Ihr
Trinkwasser. Bitte übersetzen Sie ihn oder sprechen Sie mit
jemandem, der ihn versteht.

Gujarati

આ અહેવાલ આપના પીવાના પાણી વિશે અગત્યની માહિતી ધરાવે છે. તેનું
ભાષાંતર કરો, અથવા તે સમજાવું હોય તેવી કોઈ વ્યક્તિ સાથે વાત કરો.

Greek

Η κατορθεν αναφορά παρουσιαζει
σπουδαιες πληροφορειες για το
ποσιμο νερο σας. Πρακακλω να
το μεταφρασετε η να το
σξολειασετε με κατοιον που το
καταλαβαινη απολητως.

Hebrew

הדו"ח הזה מכיל מידע חשוב לגבי מי השתייה שלך
תרגם את הדו"ח או דבר עם מישהו שמבין אותו

Hindi

यह सूचना महत्वपूर्ण है ।
कृपा करके किसी से सका अनुवाद करायें ।

Hungarian

Ez a jelentés fontos információt tartalmaz az Ön által
fogyasztott ivóvízről. Fordítsa le, vagy beszéljen valakivel,
aki megérti

Italian

Questo rapporto contiene informazioni importanti che
riguardano la vostra acqua potabile. Traducetelo, o parlate
con una persona qualificata in grado di spiegarvelo.

Japanese

この情報は重要です。
翻訳を依頼してください。

Khmer (Cambodian)

របាយការណ៍នេះមានព័ត៌មានសំខាន់ៗ
សំរាប់ព័ត៌មានបរិភោគ ។ សូមបកប្រែ
ឬពិគ្រោះជាមួយអ្នកដែលមើលយល់
របាយការណ៍នេះ ។

Korean

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시오.

Polish

Ta broszura zawiera ważne informacje dotyczące jakości wody
do picia. Przetłumacz zawartość tej broszury lub skontaktuj się
z osobą która pomoże ci w zrozumieniu zawartych informacji.

Portuguese

Este relatório contém informações importantes sobre a água
que você bebe. Traduza-o ou converse a respeito dele com
alguém que entenda o documento.

Russian

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

Serbian

Ovaj izvешtaaj sadrži važne informacije o vašoj vodi za piće.
Neka ga neko prevede ili razgovarajte sa nekim ko može da ga pročita.

Tagalog

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Thai

รายงานนี้ประกอบด้วยข้อมูลที่สำคัญเกี่ยวกับน้ำดื่มของคุณ หากคุณไม่สามารถเข้าใจเนื้อหา
โปรดพูดคุยกับผู้ที่เกี่ยวข้องกับเนื้อหาในรายงานนี้

Urdu

اس رپورٹ میں آپ کے پینے کے پانی کے بارے میں اہم معلومات ہے۔ اس کا
ترجمہ کریں، یا کسی ایسے شخص سے بات کریں جو اسے سمجھ سکے۔

Vietnamese

Báo cáo này chứa thông tin quan trọng về nước uống. Nếu có bất
kỳ câu hỏi nào liên quan đến báo cáo này, vui lòng liên lạc
(800) 342-5397



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