

Presented By
**Lake Arrowhead Community
Services District**



ANNUAL
**WATER
QUALITY
REPORT**

WATER TESTING PERFORMED IN 2016

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

We've Come a Long Way

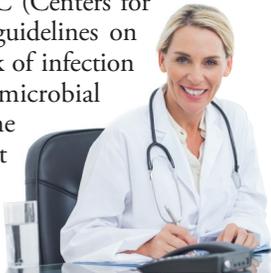
Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Where Does My Water Come From?

The primary source of drinking water supplied to District customers in Arrowhead Woods is Lake Arrowhead. That water is supplemented by five groundwater wells and purchased water from Crestline - Lake Arrowhead Water Agency (CLAWA). CLAWA treats the water and delivers it into the District's distribution system, where it is blended with water treated by the District. Both agencies use state-of-the-art treatment processes to ensure that the water delivered to your home is safe and pleasant tasting. Although our water quality consistently meets Public Health goals, we do not currently have enough supply to meet community demands in a prolonged dry period.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Regular meetings of the Board of Directors are held on the second and fourth Tuesdays of every month (with the exception of December) at 5:30 p.m. at the District Board Room (27307 State Hwy 189) in Blue Jay. Special meetings may be held, if necessary, throughout the year, with dates, times and locations to be determined.

Substances That Could Be in Water

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.

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.

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 can 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 applications, and septic systems;

Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



Lead in Home Plumbing

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.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. We are responsible for providing high-quality drinking water, but we 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. (If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.) 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 at (800)426-4791 or at www.epa.gov/lead.

Source Water Assessment

A watershed Sanitary Survey was originally completed in 1995 to determine the vulnerability of the Lake to contaminants. That survey, updated in 2001, and again most recently in 2009, concluded that the Lake is at low risk for contamination, with the greatest potential being the proximity of the wastewater collection system to the Lake. The District filed its Vulnerability Assessment with the State and federal agencies in 2006. For more information about this report, or for any questions relating to your drinking water, please call Marc Lippert, Water Treatment Supervisor, at (909) 336-7113 or Customer Service at (909) 336-7100. You may also visit our Web site at <http://www.lakearrowheadcsd.com>.

About Our Exceedance

In the summer of 2016, the District conducted lead and copper sampling at 31 homes in the Arrowhead Woods water service area. After collection, these samples were sent to an independent laboratory for analysis. Back from the lab, results showed that 2 of the 31 homes were above the Action Level (AL) for lead. The District contacted the 2 homes that were above the AL to discuss the results and inquire about where and how the samples were taken. After talking to the customers at these 2 homes, it was discovered that, in both cases, the samples were obtained from the restroom sink instead of the customary location of the kitchen sink. The District brought these two homes 2 additional sample bottles to take confirmation samples at the original bathroom sinks as well as samples from the kitchen sinks. Those 4 additional samples were sent to the independent lab for analysis, and 3 of the 4 were again above the AL. These results now took the total number of samples collected for the 2016 Lead and Copper Program to 35 samples from 31 homes. Those additional samples counted in the 90th-percentile equation, and, since there an AL exceedance in the 90th percentile, the District implemented the following additional actions:

- Lead and copper standard tap sampling at 40 homes for two 6-month periods beginning in January of 2017.
- Lead public education, including lead education brochures mailed to all customers, and brochures posted at school sites and medical facilities throughout Lake Arrowhead. Public service announcements were sent to the local newspapers and radio and television stations.
- A corrosion control study that will include monitoring for pH, alkalinity, calcium, conductivity, and water temperature in addition to lead and copper sampling.

Infants and children who drink water containing lead in excess of the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure.

Fact or Fiction

A person can live about a month without food, but only about a week without water. *(Fact: Dehydration symptoms generally become noticeable after only 2% of one's normal water volume has been lost.)*

A person should consume a half-gallon of water daily to live healthily. *(Fact: A person should drink at least 64 ounces, or 8 cups, of water each day.)*

Methods for the treatment and filtration of drinking water were developed only recently. *(Fiction: Ancient Egyptians treated water by siphoning water out of the top of huge jars after allowing the muddy water from the Nile River to settle. And, Hippocrates, known as the father of medicine, directed people in Greece to boil and strain water before drinking it.)*

There is the same amount of water on Earth now as there was when the Earth was formed. *(Fact: The water that comes from your faucet could contain molecules that dinosaurs drank!)*

A typical shower with a non-low-flow showerhead uses more water than a bath. *(Fiction: A typical shower uses less water than a bath.)*

About half the water treated by public water systems is used for drinking and cooking. *(Fiction: Actually, the amount used for cooking and drinking is less than 1% of the total water produced!)*

One gallon of gasoline poured into a lake can contaminate approximately 750,000 gallons of water. *(Fact)*



QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Marc Lippert, Water Treatment Supervisor, at (909) 336-7113 or Customer Service at (909) 336-7100. You may also visit our Web site at <http://www.lakearrowheadcsd.com>. For additional information or questions please call the State Water Resources Control Board, Division of Drinking Water, San Bernardino Division office at (909) 384-4328.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

				Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2016	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	1.30	0.75–1.53	NA	NA	No	Drinking water disinfectant added for treatment
Fecal Coliform or <i>E. coli</i>	2016	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or <i>E. coli</i> positive	0	0	NA	0	NA	No	Human and animal fecal waste
Control of DBP Precursors [TOC] (Units)	2016	TT	NA	2.65	2.5–2.8	NA	NA	No	Various natural and man-made sources
Fluoride (ppm)	2016	2.0	1	0.05	ND–0.15	0.08	ND–0.17	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity ¹ (pCi/L)	2016	15	(0)	4.86	ND–14	NA	NA	No	Erosion of natural deposits
Haloacetic Acids ² (ppb)	2016	60	NA	19	8.10–33.30	7	1.30–6.80	No	By-product of drinking water disinfection
Nitrate [as nitrogen] (ppm)	2016	10	10	ND	NA	0.33	ND–0.75	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Coliform Bacteria [Total coliform Rule] (% positive samples)	2016	1 positive monthly sample	0	0	NA	0	NA	No	Naturally present in the environment
TTHMs [Total Trihalomethanes] ² (ppb)	2016	80	NA	50.60	28.10–75.20	46	6.60–40.20	No	By-product of drinking water disinfection
Turbidity ³ (NTU)	2016	TT	NA	0.38	0.08–0.38	0.11 ⁴	ND–0.11 ⁴	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	100	NA	100 ⁴	NA ⁴	No	Soil runoff
Uranium (pCi/L)	2016	20	0.43	0.03	ND–1.90	NA	NA	No	Erosion of natural deposits
Tap water samples were collected for lead and copper analyses from sample sites throughout the community.									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	EXCEEDANCE	TYPICAL SOURCE		
Copper (ppm)	2016	1.3	0.3	0.8	0/35	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives		
Lead (ppb)	2016	15	0.2	22	5/35	Yes	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits		

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	Lake Arrowhead GSD		Crestline-Lake Arrowhead Water Agency (CLAWA)		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Aluminum (ppb)	2016	200	NS	10.29	ND-61	NA	NA	No	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2016	500	NS	18.40	14-24	95	72-120	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2016	15	NS	2.75	1-19	NA	NA	No	Naturally occurring organic materials
Corrosivity (Units)	2016	Noncorrosive	NS	11.30	11.02-11.72	NA	NA	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in the water; affected by temperature and other factors
Odor-Threshold (TON)	2016	3	NS	1.08	1-2	1	1-1	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2016	1,600	NS	318.67	200-640	NA	NA	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2016	500	NS	4.64	ND-8	66.94	39-93	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2016	1,000	NS	176	110-270	337.50 ⁴	290-410 ⁴	No	Runoff/leaching from natural deposits
Turbidity (Units)	2016	5	NS	0.292	0.100-2	NA	NA	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES ⁵

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Lake Arrowhead GSD		Crestline-Lake Arrowhead Water Agency (CLAWA)	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bicarbonate (ppm)	2016	127.40	79-200	NA	NA
Boron (ppb)	2016	ND	NA	188.13	ND-250
Calcium (ppm)	2016	34.80	21-55	NA	NA
Magnesium (ppm)	2016	4.30	3.70-5.20	NA	NA
pH (Units)	2016	7.53	6.46-8.55	8.04	7.80-8.30
Potassium (ppm)	2016	2.08	1.30-2.60	NA	NA
Sodium (ppm)	2016	17.60	16-20	81.44	69-98
Total Hardness (ppm)	2016	81.55	60-165	103	87-110
Vanadium (ppb)	2016	ND	NA	1.30	ND-4.70

¹These results were from samples taken at the IX Treatment Plant Final at the Lake Arrowhead Country Club. This water is then sent to Bernina Treatment Plant and blended with Lake and CLAWA water.

²Total Trihalomethanes and Haloacetic Acids are reported as the Highest Locational Running Annual Average.

³Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

⁴Sampled in 2015.

⁵Unregulated contaminant monitoring helps the U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

Definitions

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

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

MCL (Maximum Contaminant Level): 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 (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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

PHG (Public Health Goal): 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 EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.