Presented By

HI-DESERT WATER 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.

PWS ID#: 3610073

Continuing Our Commitment

We are proud to present our 2016 Annual Water Quality Report covering the period of January 1, 2016 thru 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 is committed to meeting our needs and goals every day—at any hour—to deliver the highest-quality drinking water with the fewest interruptions as possible. Although the challenges ahead are many, we feel that by persistently 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 for years to come.

Where Does My Water Come From?

Water supplied to HDWD customers comes from groundwater and is supplied from two basins: the Warren Basin, located in the heart of Yucca Valley, running west to east, and the Ames Basin, located in the northern part of the District. To maintain water levels within the Warren Basin, the District has been importing State Water from The State Water Project (SWP) via Mojave Water Agency (MWA) in two recharge locations: Site 6 and Site 7. In 2006, a third recharge location was added: Site 3. In 2016, the District extracted approximately 2,922.24 acre-ft/yr, with a daily average demand of 8 acre-ft/yr from the two aquifers. The District was also able to recharge approximately 4,085.90 acre-ft/yr into the Warren Basin from the State Water Project. (1 acre foot = 325,851 gallons)

The District's distribution system, which consists of over 300 miles of piping, is served by 12 active groundwater wells, supplying a totaling of 6,425 gallons per minute. Sixteen water storage reservoirs feed 18 pressure zones, with a total storage capacity of 13.34 million gallons. HDWD maintains approximately 10,512 active service connections and serves approximately 24,722 residents in the Town of Yucca Valley and unincorporated areas of San Bernardino County known as the Mesa.

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.

Source Water Assessment

The Source Water Assessment Plan (SWAP) is available for review at Hi-Desert Water District. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our water sources. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the basin's susceptibility to contamination by the identified potential sources.

Septic systems within the Warren Basin have the highest potential of contaminants that can affect the groundwater. Septage can infiltrate the groundwater supply, causing nitrate contamination in excess of maximum contaminant levels (MCL). Nitrates in excess of the MCL can cause a condition known as methemoglobinemia, also referred to as blue baby syndrome.

The District broke ground in January 2017, laying the first waste water piping at Barron Drive and Yucca Mesa Road, at the eastern end of the District. The final construction of the Waste Water Treatment and Water Reclamation Facility is scheduled for an estimated completion date of 2021. This facility will reduce the number of septic systems, which will help remove the threat of infiltration to the aquifer.

Water Conservation

Following one of the wettest years on record, the Governor of California has officially declared an end to the historic five-year drought. Californians are still urged to make water conservation a way of life due to the State's long history of unpredictable precipitation and intermittent periods of drought.

Living in a region that experiences perpetual dry climate, it remains critical that we maintain the momentum to conserve water resources and apply all the lessons learned during the past five years in preparation for droughts to come. Together, we can continue to build a sustainable future through using water more wisely and complying with current water use restrictions. For a full list of water-use restrictions and for additional tips to save water, visit www.hdwd.com.

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 attend Hi-Desert Water District's Board of Director's meetings normally scheduled twice a month, on the 2nd and 4th Wednesdays, beginning at 5:30 p.m. Board meetings are held at the District's Administration Office located at 55439 29 Palms Hwy, Yucca Valley, California. Information on regularly scheduled meetings is available online at www.hdwd.com or by calling the District's Secretary at (760) 228-6267.

Your Elected Board of Directors:

Bob Stadum - *President, 2017–2020*
Sarann Graham - *Vice President, 2017–2020*
Roger Mayes - *Director, 2014–2018*
Dan Munsey - *Director, 2014–2018*
Sheldon Hough - *Director, 2014–2018*

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please feel free to contact Steve Schwab, Water Quality Technician, at (760) 365-8333.

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Though we have been fortunate to have the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

Treatment Train Description

The District has a few wells that extract water from the deeper portions of our aquifer and have exceeded the State's maximum contaminant level (MCL) for arsenic and nitrate. Water from these wells may require treatment before placing it into the distribution system for consumption. The District currently treats one active well, Well 16 E, for arsenic and nitrates by utilizing an approved treatment technique known as blending. In this process, the well water with the high concentrations of arsenic and nitrate is blended with water from two other wells with lower concentrations. The water is then pumped into a blending tank, thus lowering the overall levels, before it is pumped into the system and to our customers' taps. The District monitors the delivered water weekly and reports the results to the State Water Resources Control Board (SWRCB).

Infrastructure Improvements

Our in-house Capital Replacement Program (CRP) has been going strong, replacing old steel water mains. Many of the mains were undersized and very old, causing most of our water-quality issues and unscheduled shutdowns. CRP has replaced a total of 37,300 feet of old steel piping with C-600 and C-900 PVC pipe, new valves, and Class A Fire Hydrants. That breaks down to 1,400 feet of 6-in pipe, 30,900 feet of 8-in pipe, and 5,020 feet of 12-in pipe.

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. 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 consider having your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/lead.

Water Sampling

The results in the tables reflect the sampling that was completed in 2016. HDWD monitors for many contaminants and follows a strict sampling schedule governed by the State and the U.S. EPA. The information below represents only those substances that were detected in the water out of the hundreds of samples taken throughout the year. 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.

The District participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. The next round of testing is for UCMR4 and is scheduled in 2020. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2016	10	0.004	0.44	ND–2.8	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2015	1	2	0.0075	ND–0.034	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine[1] (ppm)	2016	[4.0 (as Cl2)]	[4 (as Cl2)]	RAA 0.61	0–1.62	No	Drinking water disinfectant added for treatment
Chromium (ppb)	2015	50	(100)	1.43	ND–5.8	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Gross Alpha Particle Activity (pCi/L)	2016	15	(0)	6.6	2.48–10.9	No	Erosion of natural deposits
Hexavalent Chromium[2] (ppb)	2014	10	0.02	1.48	ND–4.7	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Nitrate [as nitrogen] (ppm)	2016	10	10	3.6	1.7–9.1	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	LRAA 80	NA	LRAA 7.65	ND–35	No	By-product of drinking water disinfection
Total Coliform Bacteria (Positive samples)	2016	TT	NA	1	NA	No	Naturally present in the environment
Uranium (pCi/L)	2016	20	0.43	5.09	2.57–8.17	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	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	0.3	0.16	0/35	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2014	15	0.2	0	0/35	No	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)	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Color (Units)	2016	15	NS	0.11	ND–5	No	Naturally occurring organic materials
Total Dissolved Solids (ppm)	2016	1,000	NS	260	120–390	No	Runoff, leaching from natural deposits
Turbidity (NTU)	2016	5	NS	0.15	ND–1.5	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES [3]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2015	35.7	25–55	Natural occurring salt content in water
pH (Units)	2016	7.5	6.8–8.1	Naturally occurring
Total Hardness (ppm)	2015	112.6	58–160	Naturally occurring

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3) [3]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
1,4-Dioxane (ppb)	2014	0.014	ND–0.19	Has primarily been used as a stabilizer or solvent in manufacturing
Chlorate (ppb)	2014	33.19	ND–100	Agriculture defoliant or desiccant disinfection by-product
Molybdenum (ppb)	2014	4.6	1.2–24	Naturally occurring
Strontium (ppb)	2014	280.47	150–360	Naturally occurring
Vanadium (ppb)	2014	3.62	1.5–5.6	Naturally occurring

[1] HDWD generates our own sodium hypochlorite at a 0.8% solution and doses the wellhead at approximately 1.0 ppm. (Household bleach is 5.25 %.)

[2] In July 2014, California set the MCL for Hexavalent Chromium at 10 ppb.

[3] Monitoring of unregulated contaminants 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.

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 value for TTHMs is reported as the highest LRAA.

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).

RAA (Running Annual Average): The average of sample analytical results for samples taken at all monitoring locations during the previous four calendar quarters.

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