HIGHLANDS MUTUAL WATER COMPANY

2020 Consumer Confidence Report

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Clearlake, CA 95422

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2020 Consumer Confidence Report

We test the drinking water quality for many constituents as required by State and Federal Regulations. This report shows the results of our monitoring for the period January 1 - December 31, 2019.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda

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:

- *Algae Toxins,* which are produced from various types of Bluegreen Algae (Cyanobacteria) that live and grow in the source water.
- *Microbial contaminants*, which include viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants,* which include salts and metals, that can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water 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 storm water runoff, and septic systems.
- *Radioactive contaminants,* which can be a naturally occurring or be the result of oil and gas production and mining activities.
- *Disinfection Byproducts,* which include Trihalomethanes, Haloacetic Acid and Bromate are produced by chlorination and drinking water disinfection.

In order to ensure that tap water is safe to drink, USEPA and the State Water Resources Control Board (Department of Drinking Water) mandate regulations that limit amounts of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Tables 1, 2, 3, 4, 5,6,7 and 8 list all of drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Therefore, some of the data is more than one year old yet it is consistent and representative of the quality of the water sampled.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA IN WATER

Microbiological Contaminants	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0 month	More than 1 sample in a month with a detection	0	Naturally present in the environment.
Fecal Coliform or *E. coli*	(In the year) 0	0 months	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste.

Table 2 - Sampling results showing Microcystin Toxin Concentration in Parts per Billion

Sample Date	MCL	RAW	TREATED
Test 1 6/20/2019	.30 ppb	ND	ND
Test 2 7/03/2019	.30 ppb	ND	ND
Test 3 7/18/2019	.30 ppb	.360	ND
Test 4 7/30/2019	.30 ppb	1.280	DNQ
Test 5 8/13/2019	.30 ppb	.190	ND
Test 6 8/27/2019	.30 ppb	ND	ND

TABLE 3 - SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER IN WATER

Lead & Copper	Date	No. of samples collected	90th percentile level detected	No. Sites exceeding AL	AL	MCLG	Typical Source of Contaminant
Lead (ppb)	12/19/19	20	ND	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Copper (ppb)	12/19/19	20	1.00	0	1.3	0.17	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Pet Health Tip

When going for a walk with your pet along the shore of Clearlake during the summer months, consider taking along fresh water for your pet to drink. Consuming Algae Toxins can be dangerous to your pet's health.

TABLE 4 - RESULTS SHOWING THE DETECTION OF SODIUM & HARDNESS IN RAW WATER

Chemical or Constituent (and reporting units)	Sample Date	Level Detected MG/L	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	6/12/19	11		none	none	Generally found in ground and surface water.
Hardness (Total) CaCO3	6/12/19	123		none	none	Generally found in ground and surface water.
Total Alkalinity as CaCO3	3/11/20	150		none	none	

TABLE 4-RESULTS SHOWING THE DETECTION OF SODIUM & HARDNESS IN TREATED WATER

Chemical or Constituent (and reporting units)	Sample Date	Level Detected MG/L	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	6/12/19	16		none	none	Generally found in ground and surface water.
Hardness (ppm)	6/12/19	120		none	none	Generally found in ground and surface water.
Total Alkalinity as CaCO3	6/12/19	120		none	none	

TABLE 5 - SAMPLING RESULTS FOR RADIOACTIVITY

Chemical or Constituent (and reporting units)	Sample Date	Level Detected PCI/L	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Gross Alpha (picocuries per liter)	4/29/15	.0670	3	15	none	Generally found in ground and surface water from erosion of natural deposits.

TABLE 6-DISINFECTION BYPRODUCTS, DISINFECTION RESIDUALS, & DISNINFECTION BYPRODUCT PRECURSORS					
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected (yearly average ppb)**	**Range of Sample Results**	**MCL**	**Typical Source of Contaminant**
20th Tank Total Trihalomethanes [TTHMs] (ppb)	2/12/20	19.15 UG/L	2.97-19.72	80	By-product of drinking water chlorination.
Lower Spruce Tank Total Trihalomethanes [TTHMs] (ppb)	2/12/20	3.11 UG/L	18.3-29.73	80	By-product of drinking water chlorination.
20th Tank Haloacetic Acid [HAA5s] (ppb)	2/12/20	39.40 UG/L	43.7-58	60	By-product of drinking water chlorination.
Lower Spruce Tank Haloacetic Acid [HAA5s] (ppb)	2/12/20	15.40 UG/L	20.7- 27.2	60	By-product of drinking water chlorination.
Bromate (ppb)	2/19/20	ND	5	10	By-product of water disinfection.

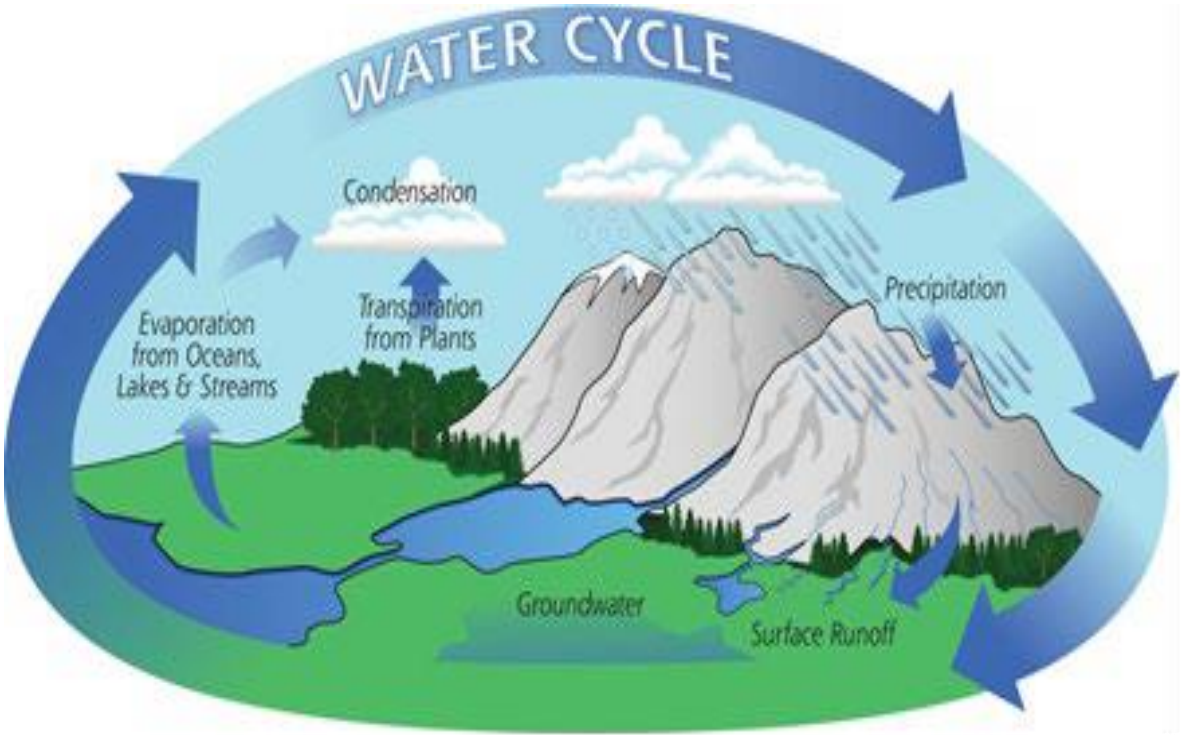

TABLE 7 - DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD IN RAW WATER						
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Arsenic (ug/l)	6/12/19	0	ND	ND		Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Aluminum (ug/l)	6/12/19	61	50.0	1000		Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Fluoride (mg/l)	6/12/19	0	.10	2.0		Generally found in ground and surface water from erosion of natural deposits,
Iron (ug/l)	6/12/19	130	100	300		Generally found in ground and surface water from erosion of natural deposits,
Manganese (ug/l)	6/12/19	0	20	50		Generally found in ground and surface water from erosion of natural deposits, run off from orchards.

DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD IN TREATED WATER						
Chemical or Constituent (Reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Arsenic (ug/l)	6/12/19	ND	2.0	10		Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Aluminum (ug/l)	6/12/19	ND	50	1000		Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Fluoride (mg/l)	6/12/19	ND	.10	2		Generally found in ground and surface water from erosion of natural deposits,
Iron (ug/l)	6/12/19	ND	100	300		Generally found in ground and surface water from erosion of natural deposits,
Zinc (ug/l)	6/12/19	170	50	5000		Added to the Finished Water to inhibit Copper and lead corrosion in the service and supply lines.

Want to acquire more ways to conserve water? Please visit www.epa.gov/watersense for more information.

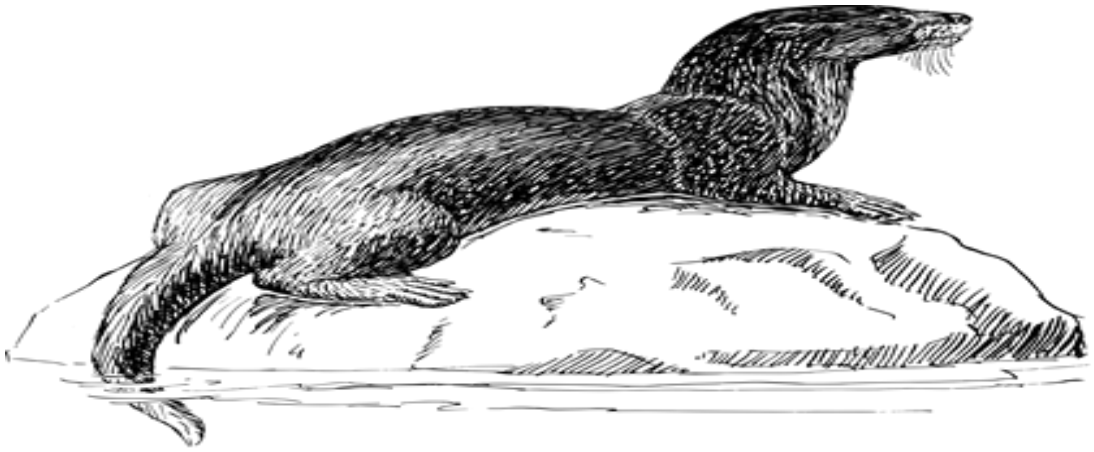

TABLE 8 - RAW WATER TEST RESULTS WITH A SECONDARY DRINKING WATER STANDARD

Constituent	Date Sampled	Level Detected	Range of Detections	MCL	**Typical Source of Contaminant**
Aluminum	6/12/19	61	50	1000 (ug/l)	Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Color	6/12/19	ND	ND	15 (Color Units)	Naturally occurring organic materials.
Fluoride	6/12/19	ND	.1 mg/l	2	Generally found in ground and surface water from erosion of natural deposits.
Iron	6/12/19	130 ug/l	100 ug/l	300 (mg/l)	Generally found in ground and surface water from erosion of natural deposits.
Odor	6/12/19	0 TON	1 TON	3 TON	Substances that form ions when in water, seawater influence.
Sulfate	6/12/19	5.1 mg/l	.5	500 (mg/l)	

TABLE 8 –**TREATED WATER TEST OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD**					
Constituent	Date Sampled	Level Detected	Range of Detections	MCL	**Typical Source of Contaminant**
Aluminum	6/12/19	ND	50	1000 ug/l	Generally found in ground and surface water from erosion of natural deposits, run off from orchards.
Color (Color Units)	6/12/19	7.0 CU		15 CU	Naturally-occurring organic materials.
Fluoride	6/12/19	ND	.10 mg/l	2	Generally found in ground and surface water from erosion of natural deposits.
Iron	6/12/19	ND	100 ug/l	300	Generally found in ground and surface water from erosion of natural deposits.
Odor	6/12/19	ND	1 TON	3 TON	Substances that form ions when in water, seawater influence.
Sulfate	6/12/19	5.0 mg/l	.5 mg/l	*	Runoff/leaching from Natural deposits; industrial waste.

***Note:** * There are no PHGs or MCLGs for constituents with secondary drinking water standards because these are not health-based levels but set on the basis of aesthetics.*

Additional General Information On Drinking Water

All 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 the 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 (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer 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 people 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 (1-800-426-4791).

Water Production and Supply:

- The Highlands Water Company Treatment Plant Facility is located at 14774 Hillcrest Avenue in the City of Clearlake. The source of water for treatment is surface water derived from Clear Lake. The treatment plant can produce two million five hundred thousand gallons of treated water daily. Servicing Two thousand nine hundred meters in the district.
- The stages outlined below consist of the treatment, pumping, storage and control systems beginning with the intake of water from the lake and ends with the delivery of water to the customer.

Lake Water Pumps:

- Raw water is drawn from Clear Lake and pumped by one of two Large Vertical Turbine Pumps located on Beakbane Island to the Hillcrest Avenue Treatment Plant for processing.

Ozone Gas Treatment:

- The primary use of Ozone Gas is to help control lake water taste and odor that occur during the warm summer months. Ozone gas is considered a more effective and a faster disinfectant than chlorine. However due to its short life it is not used in storage or distribution systems.

Clarification:

- Water flows through each ozone contact chamber into a clarifier for next stage of treatment.
- Two clarifiers settle out about 90% of the turbidity (particles) from the water.

Dual Media Filters:

- Settled water is drawn from the top of each clarifier by pumps and delivered to a dual media filter system, consisting of anthracite coal and filter sand.
- There are eight dual media filters; four dual media filters per clarifier.

Granular Activated Carbon (GAC) Filters:

- Water from the dual media filters flows into GAC Filters for further removal and control of taste and odors.

Chlorine (Cl2) Disinfectant:

- The final stage of the water treatment process involves the injection of chlorine as a disinfectant.

Treated Water Storage Tanks:

- 4,900,000 gallons of treated water storage capacity is comprised of six storage tanks.

System Control and Data Acquisition (SCADA):

- SCADA is a Computerized System that Controls the Operation and Data Collection of the Water System.

Watershed Sanitary Survey:

A Watershed Sanitary Survey of the Clear Lake Watershed was completed this year 2018

The survey includes:

- A physical and hydro geological description of the watershed.
- A summary of source water quality monitoring data.
- A description of activities and sources of contamination.
- A description of any significant changes that have occurred since the last survey that would affect the quality of the source water.
- A description of watershed control and management practices.
- An evaluation of the system's ability to meet requirements of Title 22 for microbiological contaminants and recommendations for corrective actions.

For More Information:

- If you require any further information, please contact Jeff Davis at (707) 994-2353.
- Regular meetings of Highlands Water Company's Board of Directors are held at 6:00 PM at 14580 Lakeshore Drive on the last Wednesday of each Month.

TERMS USED IN THIS REPORT	
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 U.S. Environmental Protection Agency	**Primary Drinking Water Standards (PDWS)**: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements. **Secondary Drinking Water Standards (SDWS)**: MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels. **Treatment Technique (TT)**: A required process intended to reduce the level of a contaminant in drinking water.

(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.

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.

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

Variances and Exemptions: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)