

2016 Consumer Confidence Report

Water System Name:	Humboldt Bay Municipal Water District	Report Date:	3/29/2017
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In 1996, Congress amended the Safe Drinking Water Act, adding a requirement that water systems deliver to their customers a brief annual water quality report; the Consumer Confidence Report (CCR). This report represents Humboldt Bay Municipal Water District's (District) 2016 CCR. This CCR includes information on source water, contaminants that may be present in source water, levels of any detected contaminants, and compliance with drinking water regulations (including monitoring requirements), plus additional general information on drinking water. This report also describes the regulatory system to protect public health and responsibilities of the federal and state government.

California regulations prescribe what information must be presented by public water systems in their CCR. 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 of January 1 - December 31, 2016 and may include earlier monitoring data. The results are compared to State standards and shown in Tables 1- 6 depending on the type of constituents, detection levels, and whether they are regulated or unregulated. As part of the federal drinking program, in 2013 the District participated in the Unregulated Contaminant Monitoring Rule (UCMR) 3 testing (described on page 5, results in Table 6).

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

Time and place of regularly scheduled board meetings for public participation:

Second Thursday of each month at 9:00am at Eureka Office, 828 7th Street, Eureka, California

For more information, contact: Mario Palmero, Operations Supervisor	Phone: 707-822-2918
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Type of water source:

The District's source water has been classified by the State Water Resources Control Board (SWRCB) as groundwater. The classification is important as to the regulations that a water system must follow to ensure water quality.

Name & general location of source:

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.

The Humboldt Bay Municipal Water District is a regional water wholesaler that supplies the drinking water to local communities. Drinking water delivered by the District is drawn from wells below the bed of the Mad River northeast of Arcata. This water-bearing ground below the river is called an aquifer. These wells, called Ranney Wells, draw water from the sands and gravel of the aquifer at depths of 60 to 90 feet, thereby providing a natural filtration process. During the summer, this naturally filtered water is disinfected via chlorination and delivered to the District's wholesale municipal and retail customers in the Humboldt Bay area.

During the winter, it is further treated at a regional Turbidity Reduction Facility which reduces the occasional turbidity (cloudiness) in the District's source water. While turbidity itself is not a health concern, SWRCB is concerned that at elevated levels, turbidity could potentially interfere with the disinfection process.

Drinking Water Source Assessment information:

The District treats its water and performs annual monitoring and testing, in accordance with SWRCB regulations and requirements, to ensure its water is safe to drink. In 2016, the District conducted approximately 350 water quality tests for over 50 contaminants. The results from the 2016 monitoring and testing program indicate that our water quality is very high, as has consistently been the case in past years.

The tables below list the drinking water contaminants detected during 2016. A detected contaminant is any contaminant detected at or above its Detection Limit for Purposes of Reporting (DLR) (limit is established by SWRCB) or for unregulated contaminants, the Minimum Reporting Level (MRL). The tables show the level of detected contaminants. Contaminants that are not detected, or are detected below the DLR or MRL, are not required to be reported. The tables also show the maximum contaminant levels (MCL) and public health goals (PHG). Definitions for terms used in this report are listed on the next page.

It is important to note that the presence of contaminants does not necessarily indicate that the water poses a health risk.

Drinking Water Source Assessment information continued:

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, 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*, 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, by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, can be naturally-occurring or be the result of oil and gas production and mining activities.

The District also tests for microbiological contaminants. Coliform bacteria are naturally present in the environment and are used as an indicator that other bacteria may be present. Coliform is part of the water quality-testing program to help signal if there may be a problem with the treatment or distribution system which warrants further investigation. During 2016, there were no positive test results for microbiological contaminants, as shown in Table 1.

The SWRCB allows the District to monitor for certain contaminants less than once per year because the occurrence, and/or concentrations, of these contaminants are not expected to vary significantly from year to year. Therefore, results from prior years are included if such a contaminant was detected when we last tested for it. The "Sample Date" column shows the most recent test dates for these contaminants.

It is important to note that the presence of contaminants does not necessarily indicate that the water poses a health risk.

TERMS USED IN THIS REPORT

Detection Limit for Purposes of Reporting (DLR): The DLR is a parameter that is set by state regulation for each reportable contaminant. The presence of these contaminants in the drinking water at its DLR does not necessarily indicate that the water poses a health risk and can be below its MCL.

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 (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 Office of Environmental Health Hazard Assessment.

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.

Minimum Reporting Level (MRL): The MRL is defined by the USGS National Water Quality Laboratory as the smallest measured concentration of a substance that can be reliably measured by using a given analytical method.

Notification Level: Notification levels are health-based advisory levels established by SWRCB for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

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 health at the MCL levels and are directed toward the aesthetics of drinking water.

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

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

Variations and Exemptions: SWRCB permission to exceed an MCL or not comply with a treatment technique under certain conditions.

mg/L as CaCO₃: milligrams per liter of calcium carbonate (a measure of hardness)

microsiemens/cm: a measure of specific conductance (µS/cm)

NTU: Nephelometric Turbidity Units: a measure of clarity.

n/a: not applicable

ND: not detectable at the reporting 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)

Regulatory System to Protect Public Health

In order to ensure that tap water is safe to drink, the USEPA and the SWRCB prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health. Additional information on bottled water is available on the California Department of Public Health website (<http://www.cdph.ca.gov/programs/Pages/fdbBVW.aspx>).

The federal and state government (USEPA and SWRCB, respectively) are responsible for establishing a comprehensive regulatory program to protect public health. USEPA establishes *primary* drinking water standards for microbiological, chemical and radioactive contaminants that may be found in drinking water and may pose adverse health effects. The *primary* standard, called the Maximum Contaminant Level (MCL), is the maximum allowable concentration of the contaminant in drinking water. States are delegated the primary responsibility for operation and regulatory oversight of the drinking water program. States must establish *primary* drinking water standards that are as stringent as those established by USEPA. SWRCB has adopted the USEPA primary standards, but for some contaminants has established more stringent requirements (i.e. a lower MCL).

To set a Maximum Contaminant Level for a contaminant, it is first determined how much of the contaminant may be present with no adverse health effects. This level is called the Public Health Goal. USEPA and the California Office of Environmental Health Hazard Assessment also establish either Maximum Contaminant Level Goals or Public Health Goals, respectively (MCLGs or PHGs). A PHG or MCLG are a contaminant's concentration in drinking water that does not pose significant risk to health. This is based on a human health risk assessment assuming lifetime consumption, and established risk assessment principles and methods. PHGs are non-enforceable goals. PHGs must be established for contaminants which have MCLs established or proposed for adoption. The legally enforced MCL is then set as close as technically and economically feasible to its PHG.

MCLs take into account not only a contaminant's health risk, but other factors too such as its detectability, treatability and the cost of treatment to remove it. The MCL for a contaminant may be higher than the PHG because of difficulties in measuring small quantities of a contaminant, a lack of available treatment technologies, or if it is determined that the costs of treatment would outweigh the public health benefits of a lower MCL. In the last case, it is permitted to choose an MCL that balances the cost of treatment with the public health benefits.

Tables 1, 2, 3, 4, 5, and 6 list all of the 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 SWRCB allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of months in violation	Maximum Contaminant Level (MCL)	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a positive detection	0	Naturally present in the environment
Fecal Coliform or <i>E. coli</i>	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or <i>E. coli</i>	0	Human and animal fecal waste

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	Sample Date	No. of samples collected	90 th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (µg/L)	2014	5	2.0	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers, erosion of natural deposits
Copper (mg/L)	2014	5	0.925	0	1.3	0.3	Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (mg/L)	2016	3.7		none	none	Salt present in the water and is generally naturally occurring
Hardness (mg/L as CaCO ₃)	2016	87		none	none	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

*Any violation of an MCL or AL is asterisked. Additional information regarding the violation is provided later in this report.

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
TTHMs (µg/L) – (Total Trihalomethanes)	2016	7.7		80	n/a	By-product of drinking water chlorination
HAA5 (µg/L) (Haloacetic Acids)	2016	1.1		60	n/a	By-product of drinking water chlorination
Chlorine (mg/L)	2016	Average = 0.72		4	4	Drinking water disinfectant added for treatment.
Aluminum (mg/L)	2015	0.011		1	0.6	Discharges from industrial manufacturers, erosion of natural deposits

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Chloride (mg/L)	2016	3.9		500	n/a	Runoff/leaching from natural deposits, or seawater influence
Sulfate (mg/L)	2016	10.0		500	n/a	Runoff/leaching from natural deposits; industrial wastes
Specific Conductance (µS/cm)	2015	160		1,600	n/a	Substances that form ions when in water
Total Dissolved Solids (mg/L)	2016	90		1,000	n/a	Runoff/leaching from natural deposits
Turbidity (NTU)	2016	Average = 0.07	0.03 – 0.25	5	n/a	Turbidity has no health effects. However, high levels of turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Unregulated Contaminant Monitoring Rule (UCMR)3 – 2013 Testing Results

As part of the federal drinking water program, USEPA issues a list of currently unregulated contaminants to be tested by Public Water Systems throughout the nation. This process occurs every five years pursuant to the Unregulated Contaminant Monitoring Rule (UCMR). The purpose of the UCMR program is to determine the prevalence of unregulated contaminants in drinking water. Results of this testing help USEPA determine whether or not to regulate new contaminants for protection of public health.

There have been three cycles of monitoring: UCMR 1 (2001-2003), UCMR 2 (2008-2010), and UCMR 3 (2013-2015). The District participated in UCMR1 and UCMR2 in which 37 constituents were tested; all results were non-detect. The District also participated in the UCMR 3 testing in 2013. The District tested 28 constituents on USEPA's List 1 (Assessment Monitoring) and List 2 (Screening Survey). Of the 28 constituents tested, 24 were non-detect and four had results. The table below shows the four constituents with results above their minimum reporting levels (MRL). Although unregulated by USEPA, two of the four have MCLs established or proposed by SWRCB. Information on the likely source and potential health effects are also included.

TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (and reporting units)	Sample Date	Range of Detections	Notification Level	MCL	PHG	Health Effects Language
Chromium 6+ (µg/L)	2013	0.18 - 0.23	n/a	10 ¹	0.02	Naturally occurring from geological formations, also from manufacturing of textile dyes, wood preservation, leather tanning, and anti-corrosion coatings.
Chromium, Total (µg/L)	2013	0.20 – 0.39	n/a	50	n/a	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits. Some people who use water containing chromium in excess of the MCL over many years may experience allergic dermatitis.
Strontium, Total (µg/L)	2013	240 – 310	n/a	n/a	n/a	Strontium is a silvery metal that rapidly turns yellowish in air. Strontium is found naturally as a non-radioactive element. Strontium has 16 known isotopes. Naturally occurring strontium is found as four stable isotopes Sr-84, -86, -87, and -88. Twelve other isotopes are radioactive.
Vanadium, Total (µg/L)	2013	0.38 – 0.65	50	n/a	n/a	Naturally-occurring; the primary possible contaminating activity is steel manufacturing and in association with hazardous waste sites. The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

¹The MCL for Chromium 6+ became effective on July 1, 2014.

Additional General Information on Drinking Water

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) or visiting their website (<http://water.epa.gov/drink/index.cfm>).

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) and website (<http://water.epa.gov/drink/index.cfm>).

Lead-Specific Language for Community Water Systems: 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. The District is responsible for providing high quality drinking water, but 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 (or until the water becomes noticeably cooler to the touch) before using water for drinking or cooking. 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 or at <http://www.epa.gov/lead>.