

May 19, 2017

McKinleyville Community Services District (MCSD)

2016 Consumer Confidence Report

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

Last year, as in years past, your tap water met all United State Environmental Protection Agency (USEPA) and State drinking water health standards. MCSD vigilantly safeguards its water infrastructure and once again, we are proud to report that our system did not violate a maximum contaminant level or any other water quality standard in 2016.

Introduction and Background

For a number of years, California State Law has required that water systems prepare an *Annual Water Quality Report* for its customers providing information regarding the quality of water delivered to them. The 1996 amendments to the federal Safe Drinking Water Act introduced new reporting requirements - namely preparation of a *Consumer Confidence Report* - with essentially the same purpose as that of the *California Water Quality Report*. Since 1999, California water systems must comply with federal reporting requirements. This report represents the McKinleyville Community Service District's 2016 Consumer Confidence Report. It is a snapshot of the quality of the water we provided last year. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or the quality of your drinking water, please call Greg Orsini, General Manager at 839-3251. You may also attend one of the regularly scheduled meetings of our Board of Directors, which are held the first Wednesday of each month at 7:00 p.m. at Azalea Hall (1620 Pickett Road).

Water Source

Drinking water delivered by the McKinleyville Community Services District (MCSD) is supplied by the Humboldt Bay Municipal Water District (HBMWD). HBMWD water is drawn from wells located in the bed of the Mad River northeast of Arcata along Highway 299. These wells, called Ranney Wells, extract water from the sands and gravel of the riverbed at depths of 60 to 90 feet, thereby providing a natural filtration process. In low rainfall periods, this naturally filtered water is then disinfected via chlorination and delivered, without further treatment, to the HBMWD's wholesale municipal and retail customers in the Humboldt Bay area. The District's source water has been classified by the State Water Resources Control Board (SWRCB) as groundwater. The classification is important with respect to the regulations that a water system must follow to ensure water quality.

In the late 1990s heavy winter rainfalls and high river levels were accompanied by increased turbidity (cloudiness) in the District's water. While turbidity itself is not a health concern, there is concern that it may interfere with the disinfection process. In 1997, DHS mandated that the District take steps to control the turbidity in its drinking water. Together with its wholesale customers, the new Turbidity Reduction Facility (TRF) was constructed and became operational in late 2002. For the first time in many years the District met the State's secondary maximum contaminant level standard for turbidity of less than 5 NTU (the unit which turbidity is measured). The TRF operates only during winter months.

General Water Quality

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 (1-800-426-4791) or visiting the USEPA website (<http://www.epa.gov/dwstandardsregulations/drinking-water-standards-and-health-advisory-tables>)

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 can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which 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.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.
- 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 storm water runoff, agriculture application, and septic systems.

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, persons 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 and the Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791) or visiting their website (<http://www.epa.gov/dwstandardsregulations/drinking-water-standards-and-health-advisory-tables>)

HBMWD consistently and frequently monitors for the presence of giardia and cryptosporidium in its drinking water. Since the mid-1990s, when the EPA approved the testing technique for these contaminants, HBMWD has never had a confirmed detection of either contaminant.

Water Quality Testing Results

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board (State Board) prescribes regulations which 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. HBMWD treats its water and performs annual monitoring and testing, in accordance with the USEPA and the State Board regulations and requirements, to ensure its water is safe to drink. In addition, MCSD performs separate monitoring and testing, in accordance with the USEPA and the State Board regulations and requirements, to ensure that the water quality remains high within the MCSD storage and distribution systems. Additional monitoring performed by MCSD includes laboratory analysis for coliform bacteria, disinfection byproducts and lead/copper. Test results for disinfection byproducts and lead/copper are included in the MCSD test results table. The MCSD testing for coliform produced zero results. Test results for disinfection byproducts have been below the Maximum Contaminant Level (MCL).

In 2016, HBMWD conducted approximately 350 water quality tests for over 50 contaminants. MCSD also performed approximately 244 water quality tests during 2016. The results from both the HBMWD's and the MCSD's 2016 monitoring and testing programs indicate that our water quality is very high, as has consistently been the case in past years.

The tables enclosed in the newsletter list all the drinking water contaminants that were monitored during 2016. Additionally, the State requires that both Districts 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, results from prior years are included if such a contaminant was detected. There are very few entries in the tables because very few contaminants were actually detected in prior years. It is once again important to note that the presence of these contaminants does not necessarily indicate that the water poses a health risk.

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. MCSD 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 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/safewater/lead>).

During 2014, the District was also required to test for unregulated contaminants as part of the Unregulated Contaminant Monitoring Rule (UCMR) 3. This testing and results are described 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.

Definitions of Terms Used in This Report:

You will find many terms and abbreviations in the table below. To help you understand these terms, the following definitions are provided:

- **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 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.
- **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 cover the aesthetic quality of the water such as odor, taste and appearance.
- **Primary Drinking Water Standard (PDWS):** MCLs for contaminants that affect health along with monitoring, reporting requirements and water treatment requirements.
- **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 (RAL):** The concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique (TT):** A Required process intended to reduce the level of a contaminant in drinking water.
- **Variations and Exemptions:** State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.
- **n/a:** not applicable
- **ND:** not detectable at testing limit
- **ppb:** parts per billion or micrograms per liter ($\mu\text{g/L}$)
- **ppm:** parts per million or milligrams per liter (mg/L)
- **pCi/l:** picocuries per liter (**a measure of radiation**)
- **mgCaCO₃/L:** milligrams of calcium carbonate per liter (**a measure of hardness**)

- **microseimens/ cm** : a measure of specific conductance ($\mu\text{S}/\text{cm}$)
- **NTU**: Nephelometric Turbidity Units
- **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.
- **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.
- **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.

Humboldt Bay Municipal Water District Testing: RAW SOURCE WATER

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections (In a mo.) 0	No. of months in violation	MCL	MCL G	Typical Source of Bacteria
Total Coliform Bacteria	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>	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 CaCO3)	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	Average = 7.7		80	n/a	By-product of drinking water chlorination
HAA5 (µg/L) (Haloacetic Acids)	2016	Average = 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	Average = 3.9		500	n/a	Runoff/leaching from natural deposits, or seawater influence
Sulfate (mg/L)	2016	Average = 10.0		500	n/a	Runoff/leaching from natural deposits; industrial wastes
Specific Conductance (µS/cm)	2015	Average = 160		1,600	n/a	Substances that form ions when in water
Total Dissolved Solids (mg/L)	2016	Average = 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.

McKinleyville Community Services District Testing: DISTRIBUTION SYSTEM

Contaminant and units	Level Detected	MCL	PHG (or MCLG)	Likely Source and Potential Effects (if above MCL)
Microbiological Contaminants -- 212 Samples				
Total Coliform Bacteria	1 positive	More than one positive sample monthly	Zero positives	Naturally present in the environment
Fecal Coliform And E. coli. Bacteria	Zero positive	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform positive	Zero positive	Fecal coliform and E. coli. are bacteria whose presence indicates that water may be contaminated with human waste or animal fecal waste
Disinfection Byproducts and Disinfectant Residuals				
TTHMs – Total (µg/L) Trihalomethanes	Average= 29.5	80 µg/L	n/a	By-product of drinking water chlorination
HAA5 (µg/L) Halo acetic Acids	Average= 10.9	60 µg/L	n/a	By-product of drinking water chlorination
Chlorine (mg/L)	Average= 0.50	4 mg/L	4	Drinking water disinfection
Lead and Copper				
Copper (mg/L)	Thirty sites tested none above the AL 90 th percentile=.30	AL = 1.3 mg/L	0.3 mg/l	Internal corrosion of household plumbing; erosion of natural deposit
Lead (µg/L)	Thirty sites tested none above the AL 90 th percentile= 1.73	AL = 15 µg/L	0.2 µg/L	Internal corrosion of household plumbing systems; discharges from industrial manufactures, erosion of natural deposits

Additional Water Characteristics
Sodium and Hardness

Although sodium and hardness do not have MCLs, they are of interest to many consumers who are concerned about sodium intake. Hardness is the sum of polyvalent cations present in water, generally magnesium and calcium. The cations are, usually naturally occurring. Sodium refers to salt present in water and is generally naturally occurring.

Sodium (ppm) *	Average = 3.6	Samples Taken in 2007
Hardness * (mgCaCO ₃ /L)	Range = 57 – 80 Average = 67	Samples Taken in 2005

Unregulated Contaminant Monitoring Rule (UCMR) 3 – 2014 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.

The District participated in the current UCMR 3 testing in 2014. The District tested 28 constituents on USEPA's List 1 (Assessment Monitoring). Of the 28 constituents tested, 24 were non-detected 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 MCL's established or proposed by CDPH. Information on the likely source and potential health effects is also included.

McKinleyville Community Services District Testing: UCMR 3

Contaminant and Units	Level Detected	Levels & Goals (see last page for definitions)		Likely Source and Potential Effects (if above MCL)	
		MRL	MCL		
Unregulated Contaminant Monitoring Rule 3 – Detected Chemicals					
Chromium 6 +	Range = 0.34 – 0.45 µg/L	0.03 µg/L	10 µg/L	0.02 µg/L	Naturally occurring from geological formations, also from manufacturing of textile dyes, wood preservation, leather tanning, and anti-corrosion coatings.
Chromium, Total	Range = 0.25 – 0.34 µg/L	0.20 µg/L	50 µg/L	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	Range = 347 – 348 µg/L	3.00 µg/L	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	Range = 0.68 – 0.70 µg/L	0.20 µg/L	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.

Note: Vanadium has Notification level of 50 µg/L