

Why is a bacteria water quality objective important?

A bacteria water quality objective sets the allowable level of pollution from fecal waste in rivers, lakes, streams, and other surface waters. These objectives are a way to track changes in an aquatic environment over time. Some objectives are designed to protect humans from getting sick from exposure to water polluted by sewage or manure. Water samples can be compared to the allowable indicator bacteria levels set by a bacteria objective and provide environmental managers information about where there are water quality problems that need to be addressed.

I am concerned that a surface water I recreate in might be polluted by sewage or manure. Should I tell someone?

Yes. If you are concerned about a change you see in a stream, creek, river, or lake you are familiar with you should reach out to your local county environmental health department, to the Lahontan Water Board at Lahontan@waterboards.ca.gov or (530)-542-5400, or report your concerns to the [CalEPA Environmental Complaint System](#). Changes in a surface water may include changes to water color, water clarity or water odor. There may also be changes in the amount of water you see, although please be aware that flows are often reduced in California streams beginning during the summer until rain and snow begins in the fall.

What kind of illnesses might I get if I wade or swim in a surface water polluted by sewage? What are the symptoms and who should I report it to?

In most cases, people who have contact with water which has been contaminated by raw sewage or manure suffer from some form of gastrointestinal illness, such as stomach flu or gastroenteritis. Symptoms include diarrhea, vomiting, nausea, stomachache, and fever, or any combination of these symptoms. Some people may experience skin irritations or skin rashes. In more severe cases symptoms might also include abdominal cramps or bloody stool. Other diseases may also be transmitted through surface waters contaminated by sewage or manure such as shigellosis, typhoid fever, salmonella or cholera, as well as *E. coli* O7:H157 which can cause death in rare cases. There is evidence that the novel COVID-19 virus is also carried in fecal material and raw sewage and could be transmitted to humans via contact with a feces-contaminated surface water.

Parasites can also be found in sewage or manure, including *Cryptosporidium* or *Giardia lamblia*. Exposure to these agents can cause diarrhea and stomach cramps. Viruses such as Hepatitis A are also present in sewage and can cause liver damage. Symptoms of Hepatitis A are feeling tired, jaundice, lack of appetite, nausea and diarrhea. If you experience any of these symptoms within twelve days of contacting a surface water you suspect has caused you to become sick, you should contact your local Public Health Department as soon as you are able.

Can fecal coliform or *E. coli* bacteria make me sick? Do I have to drink the water to get sick?

Generally, both fecal coliform and *E. coli* exist within human intestines and do good things for our body. These types of bacteria do not make us sick. However, there are some strains of *E. coli* which can be harmful to humans, such as the O157:H7 strain. This strain usually causes illnesses through consumption of contaminated or undercooked food or unwashed leafy green vegetables. *E. coli* O157:H7 generally is generally not transmitted through contaminated surface waters but can be found in raw sewage and therefore could be present in a river, lake or stream in rare cases.

Drinking untreated water can make you sick. However, you may become sick simply from contact with contaminated water which you do not drink. Water droplets can be inhaled when you breath while you are partially submerged or close to a surface water contaminated with fecal material, allowing any pathogens or viruses in that water to enter your body. Touching contaminated water might also transmit infections, either through your skin or by touching your eyes, nose, or mouth with your hands after touching contaminated water.

What is my risk of becoming ill?

Your risk of getting an illness from a contaminated surface water depends on two factors. First, the amount of fecal material that might be present in a surface water can determine the number of pathogens, viruses or other diseases that could be present. Second, the amount of water you are exposed to can determine the type and severity of illness suffered. For example, exposing skin to contaminated water might result in only a mild skin irritation; ingesting a mouthful or more of the same water could cause more severe gastrointestinal illnesses or other complications

The Lahontan Water Board fecal coliform bacteria objective equates to a risk of illness of about 1 in 1000 exposures. The Statewide *E. coli* objective equates to 32 illnesses in 1000 exposures. EPA defines gastrointestinal illness as “any of the following [within ten to 12 days of swimming]: (a) diarrhea (three or more loose stools in a 24-hour period), (b) vomiting, (c) nausea and stomachache, or (d) nausea or stomachache and impact on daily activity.

Do animals have the same risk? What about my pet?

Pathogens, viruses, and other bacteria that affect humans can also affect other animals. Household pets such as dogs can be infected by *Giardia*, *Campylobacter* and Salmonella which can cause them to become sick. Generally, the risks of infection from contact with a contaminated surface water is lower for animals.

What is the timeline for the Bacteria Water Quality Objectives Evaluation Project?

Staff will present a collection of potential options for the project for the Lahontan Water Board to consider in November 2020. The Board will give direction to staff about which strategy will result in the most appropriate outcome for the Lahontan Region, after which staff will begin to work under the California Environmental Quality Act (CEQA) guidelines for developing projects that affect our environment. This part of the project is expected to last through 2021. Staff expect to present the Lahontan Board with a recommendation to amend the Basin Plan in 2022, although the timeline may change as the project advances.

How can I receive project updates?

To receive updates and notices about this project, enter your email information on the [Project webpage](#). To subscribe, you will need to provide your email address and your name.

Who can I contact for more information about Bacteria Water Quality Objectives Evaluation Project?

You can contact Ed Hancock, the project lead at (530)-542-5574 or Ed.Hancock@waterboards.ca.gov, if you would like to discuss anything related to this project in more detail.