Health Protection
Office of the Chief Medical Health Officer
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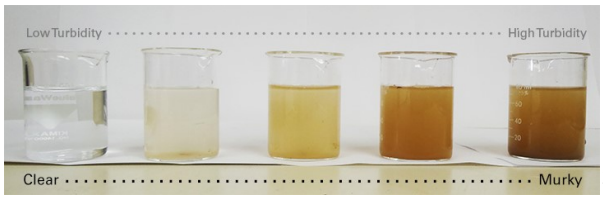
Water Turbidity

June 2023

What is water turbidity? [1]

- Turbidity is a measure of the relative clarity or cloudiness of water caused by the presence of suspended particles.
- Turbidity can be caused by natural sources, such as soil erosion following heavy rainfall, or by human activities, such as construction or agricultural practices.
- Turbidity can affect the appearance, taste, and odor of water, and can also interfere with the effectiveness of disinfection.



[2]

How is turbidity measured?

- Turbidity is reported in a unit called NTU (nephelometric turbidity units).
- Canadian guidelines recommend that the maximum acceptable level of turbidity in treated drinking water should be less than 1 NTU.
- The guideline also recommends that water treatment processes should be able to consistently produce finished water with turbidity levels of less than 0.1 NTU.

How does turbidity affect drinking water safety?[3]

- Turbidity does not necessarily pose a threat to human health, but it can be an indicator of the potential presence of human pathogens. It also has the potential to disrupt or overload drinking water disinfection processes, such as ultraviolet (UV) light and chlorination, to the point that they no longer effectively deactivate pathogens.
- Turbidity can provide a physical barrier for pathogens, protecting them from disinfectants, which may increase the risk of waterborne disease.

[1] From the Guidelines for Canadian Drinking Water Quality: Guideline Technical Document – Turbidity
[2] Image from World Bank Blogs: How to test water quality? Here are some low-cost, low-tech options
[3] Drinking Water Officers' Guide 2022: Part B: Section 9 Decision Tree for Responding to a Turbidity Event in Unfiltered Drinking Water

How is turbidity monitored and controlled?

- Water systems are encouraged to regularly monitor and report turbidity levels to the health authorities and take appropriate actions when exceedances occur.
- When exceedances occur, the water supplier should investigate the cause and take appropriate action to correct the problem, such as adjusting treatment processes or identifying and addressing the source of the turbidity.

Is turbid (discoloured) water acceptable to drink?

- When a significant increase in turbidity is detected, it may be necessary to issue a turbidity advisory, a boil water advisory or to shut off the water supply to protect public health.
- The key strategy to ensure safe drinking water is to maintain disinfection; i.e., the amount of chlorine residual in the water. During turbidity events water operators will increase disinfection and monitoring of disinfectant in the system.
- If sufficient level of disinfectant cannot be maintained the water users will be directed to boil their water or switch to an alternate source.

What should I do during a turbidity advisory? Should I boil my water?

- During a turbidity event it is important to follow the direction of your water operator, the Medical Health Officer, and/or the local Drinking Water Officer.
- If a boil water notice has been issued please ensure that drinking water is brought to a rolling boil for a minimum of one minute and follow the directions outlined on the VCH boil water notice FAQs.

My tap water and the water in my bathroom fixtures is cloudy or even brown coloured. Why is my water discoloured?

- Heavy rainfalls or other environmental conditions have caused fine silt materials to slide into the lakes or sources where we draw our drinking water from. This silt is suspended in the drinking water and gives it that cloudy, brownish look. That water has entered the distribution system and your household fixtures. Discoloration in water can also be caused by rust and air in the distribution system.

What should I do if I have a water treatment system in my house?

- The fine silt particles tend to clog up the filters in many home and commercial filtration systems. If this occurs you would normally see a reduced flow and eventually no flow of water through the treatment systems. For example, fridge filters for ice makers and through the door water dispensers will likely clog up fairly quickly. Until the turbidity advisory has been lifted it may be prudent to turn fridge ice makers and water dispensers off.

What can I do about commercial ice, ice making, beverage, and water units?

- Ice makers, water dispensers and any other beverage dispenser connected to the affected municipal supplies may experience deterioration in the quality (and ultimately quantity) of the product. For example, given the expected level of suspended matter in the turbid water, most commercial filtration systems will be overwhelmed and are designed to shut down when the filter medium gets clogged.
- If the aesthetic characteristics of the ice, water or beverage are critical to your business you many need to arrange for alternate sources of clear water. In addition you may want to disconnect or turn off water dispensing machines, drinking fountains, ice/syrup machines, produce misters, ice-making units and soda machines until the turbidity advisory has been lifted. You will then need to flush your systems out and replace filters according to manufacturer's instructions.

Does the advisory impact me if I run a laboratory, medical office or dental office?

- If you have equipment or processes that require a water supply that is free of any suspended matter or silt, you may be affected. If you have pre-filtration as part of your process, you may experience premature clogging of your filters or increased necessity to backwash the filters. Refer to your manufacturer/supplier's instructions to remedy this situation.

What happens after the turbidity advisory is lifted?

- You may need to change filters and re-start, flush or sanitize any water-using fixture or piece of equipment in accordance with the manufacturers' specifications. This may vary from fixture to fixture. Remember to include misters, ice makers (discard the first bin full), and beverage machines.
- Run cold water faucets and drinking fountains for 3 minutes each if they have not been used in the last 24 hours.

How will I know when the turbidity advisory is lifted?

- Once turbidity levels have returned to normal, your Drinking Water Officer, Medical Health Officer or Local Government will issue a statement through the media or other local channels.

Can I speak to a person in Public Health if I have health related questions about a turbidity advisory?

- Please contact your local Environmental Health office at:

Service Area	Phone
Central Coast & West Chilcotin	604-983-6793
North Shore	604-983-6793
Powell River	604-485-3310
Richmond	604-233-3147
Squamish	604-892-2293
Sunshine Coast	604-885-5164
Vancouver	604-675-3800
Whistler	604-932-3202