

TURBIDITY

What is turbidity?

Turbidity is a measure of how clear or transparent the water is in water sources such as streams or rivers. More simply, it indicates how muddy the untreated raw water is. It measures the amount of suspended sediments in the water, which may be high or low depending on the type of riverbed, the pollutants from human activities in the watershed, or the plant and animal life in the river.

Turbidity degrades the quality and quantity of raw water. Most importantly, higher turbidity levels in the untreated water may be associated with higher levels of bacteria and other disease-causing microorganisms, which may affect the health of individuals and even entire communities.

What causes turbidity?

Turbidity is related to the amount of sediment a river or stream carries in the flowing water. Most sediment is soil that is removed from the land by erosion. Sediments also arise from the surface water runoff from farms, industries, roads and housing developments. When sediments run into rivers or streams, it becomes a source of water pollution. During and after rainstorms, water that runs rapidly off mountain slopes or hillsides can pick up high levels of sediments resulting in high turbidity.

How do muddy streams and rivers affect your water supply?

Muddy water entering the treatment plant can interfere with the treatment process, leading to:

- Increased use of expensive chemicals
- Increased treatment times
- Reduced quantity of drinking water produced and delivered to customers
- Low water pressure
- Taste, odour and discolouration problems.

How does turbidity affect the water treatment process?

If turbidity in the raw water is high, plant operators must adjust the treatment process to use more filtration and add more expensive chemicals. If the raw water is too muddy for effective chlorination, the NWC must shut down the water plant to protect the water supply to our customers.

What human activities cause turbidity to occur?

Rivers and streams become muddy because of soil erosion and watershed degradation. Some erosion is a natural process, but the rate of erosion is increased, often significantly, by human activities. Other human activities create wastes and debris that gets washed into streams and rivers.

Turbidity problems arise from these human activities:

- Improper land clearing activities on steep slopes cause high levels of soil erosion
- Deforested watersheds cause water to run off hillsides too quickly, picking up high levels of solids and pollutants, which increases soil erosion
- Construction wastes during housing and road development as well as improper sand quarrying and bauxite mining cause sediments and pollutants in surface runoff
- Unsustainable farming practices on steep slopes lead to soil erosion
- Improper disposal of household and industrial wastes or dumping on roadsides, gullies or near water sources contaminates streams and rivers
- Washing clothes, vehicles or other items in or near rivers and streams contaminates the water supply.

How can we reduce turbidity in Jamaica's drinking water supply?

Protecting the sources of our drinking water supply must be done in your community. Our everyday activities affect the health of our watersheds, the quality of raw water supply sources as well as water supply services and costs. All of us play an important role in protecting and properly managing watersheds to protect our water supply. Protect our rivers from contamination and the difference will be clear! Plant trees, dispose of waste properly, and don't clear vegetation or farm on steep slopes.