

Bacteria Information – Fall 2009

Bacteria are found in virtually all streams and lakes around the world, and Kansas City urban streams are no exception. However, when certain types of pathogenic bacteria are present at certain levels that can cause sickness in humans, there is cause for significant concern. There are many microorganisms which may cause illness in humans. But because the practice of sampling streams and lakes for all bacteria is relatively cost prohibitive, it has become common instead to look for an “indicator” bacteria named *Escherichia coli* (commonly known as *E. coli*).

Where does the bacteria come from?

Bacteria exist naturally in the environment. They get into lakes and rivers via wildlife, human sources, and from run-off after a rainfall event. Potential sources of bacteria in urban settings include pet wastes, wastewater treatment plants, old leaking sewer lines, sewer line overflows, droppings from waterfowl (such as Canada Geese) and other wildlife.

What are the risks from bacteria?

Bacteria in stream or lake water can cause gastrointestinal problems, such as diarrhea, if swallowed. Typically, exposure to skin does not result in skin problems, such as rashes or swimmers’ itch. Although swallowing water can lead to flu-like symptoms, the health effects from doing so are typically not life-threatening.

What level is considered safe?

Each person must make his or her own decision as to what risks to take by swimming or wading in a stream. Although the term “risk-based level” means that there may be a greater likelihood of developing an illness if you consume water containing bacteria at or above these levels, it does not mean that levels below the guidelines are absolutely “safe.” These are merely guidelines, and we each need to make our own decisions on the level of risk we are willing to take.

Kansas

Long-term Average* (April 1 – October 31): 262 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion.

Long-term Average* (November 1 – March 31): 2358 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion.

Missouri

Long-term Average* (April 1 – October 31): 126 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for whole body contact (such as swimming).

Long-term Average* (April 1 – October 31): 1134 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for secondary contact (such as fishing, wading, boating).

EPA

For a Single Sample: 236 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for **designated bathing beaches**.

For a Single Sample: 299 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for **moderate use beaches**.

For a Single Sample: 409 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for **light use**.

For a Single Sample: 576 counts (or higher) per 100 ml is considered a higher risk for illness through ingestion for **infrequent use**.

Long-term Average*: 126 counts (or higher) per 100 ml is considered to be a higher risk for illness through ingestion.

*Long-term average generally refers to the geometric mean of five samples taken within 30 days.

What should I do if I find the levels are above the risk-based guidelines?

- Avoid any situation which could cause you to swallow stream water.
- If you have been in contact with lake water, shower afterward.
- If you have been in contact with stream water, wash hands before eating.