



# BACTERIA

A NATURALLY OCCURRING PHENOMENON



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY



The Michigan Department of Environment, Great Lakes, and Energy (EGLE) often receives complaints claiming that “someone dumped paint or a rust-colored substance” or that there is an unnatural colored oil-like sheen in moist areas or in a water body. Some oil-like films, coatings, and slimes, although they may look bad, are natural phenomena. These phenomena are caused by single-celled organisms called bacteria.

Slimes, oil-like films, and rock coatings are often made by bacteria that are reacting to the natural presence of minerals, such as iron, manganese, copper, and sulfur, in the water. Bacteria live in wet areas, including on the water surface, in the water column, and in the lake sediment.

Some bacteria obtain energy and perform other life functions by transforming those naturally occurring minerals to different chemical forms. These bacteria are of no threat to human health and have been involved in the iron and manganese cycles for billions of years. Some bacteria are very useful because they remove harmful materials from water.



Sometimes, naturally occurring bacteria can be confused for an oil or petroleum spill when the bacteria attach itself to the water's surface. Sunlight bounces off the films, giving them an oily appearance. To test the difference between a bacterial film and oil floating on the water, break the film. If the film stays broken, it is a natural bacterial film. If it flows back into place, it is petroleum, which indicates pollution. **If you feel the substance may be a spill or pollution, do not touch the material and contact the State of Michigan Pollution Emergency Alerting System (PEAS) hotline at (800) 292-4706.**



*Bacteria film in a wetland area with the appearance of an oil spill*

Bacteria produce different color films, coatings, and slimes. Bacteria that precipitate (settle out of water as a solid) copper minerals may make turquoise blue films. Green and purple bacterial slimes may appear when sulfur is present, while white slimes occur in the presence of aluminum, sulfur, or calcium minerals. Iron bacteria produce brown or reddish-brown deposits.

For more information, including tips to help reduce the amount of nutrients that can enter a lake from your home activities, please contact any EGLE district office or call the State of Michigan's Environmental Assistance Center at (800) 662-9278.

If you find pollution and believe it is human-induced, please report it to the PEAS hotline at (800) 292-4706.



**Michigan.gov/EGLE | 800-662-9278**

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