



# Groundwater in the Four Townships

**Four Township Water Resources Council**  
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Groundwater is water that is in the ground. But, we may ask, how did it get there? Groundwater comes from precipitation—rain and snow—and surface water that soaks into the ground. The water moves down into the ground, passing between particles of soil, sand, gravel, or rock until it reaches a depth where the ground is filled, or saturated, with water, also known as the **water table**. The water table may be very near the ground's surface or it may be hundreds of feet below.

Groundwater is stored in the ground in materials like gravel or sand. Water can also move through rock formations like sandstone or through cracks in rocks. An underground area that holds a lot of water, which can be pumped up with a well, is called an **aquifer**. Aquifers are often used as domestic water supplies. All landowners in the four townships are dependent on groundwater as their primary source of drinking water.

Groundwater is one part of the **hydrologic cycle**. Water is never lost from the earth; it is simply recycled again and again. In fact, you are drinking the same water that has been on earth for millions of years!

Groundwater and surface water are often linked to one another. For example, groundwater can move through the ground and into a lake or stream. Or, water can seep out of a lake into the ground and become groundwater. Most of the lakes and streams in the four townships are sustained by groundwater.

Most groundwater is clean, but groundwater can become polluted, or contaminated. Surface water and groundwater pollution can come from point sources or nonpoint sources. **Point sources** are distinct locations where pollution enters the water, such as a pipe or a septic tank, or at a particular location where a spill has occurred. **Nonpoint sources** of pollution are diffuse and usually affect a large area. Examples include fertilizer runoff from residential or farmland, or atmospheric fallout of pollutants such as mercury or acid rain. When pollutants leak, spill, rain down, or are dumped on the ground they can move through the soil. Because it is deep in the ground, groundwater pollution is generally difficult and expensive to clean up. Soils in the four townships are highly permeable. Thus, the spill of a contaminant is likely to find its way into our groundwater supplies.

Besides groundwater **quality**, human activities can also alter groundwater **quantity**. Although water can only be recycled (not created or destroyed), water can be displaced from one geographic area to another, or displaced from one part of the hydrologic cycle to another. For example, if groundwater is used—such as for irrigation—at a faster rate than it is replaced, aquifers can be depleted and eventually run dry.

Protecting our groundwater is essential to protecting public health and the lakes and streams in the four townships.

# Ten Ways to Protect and Conserve Groundwater

from The Groundwater Foundation

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1. Dispose of chemicals properly.
2. Take used motor oil to a recycling center.
3. Take short showers.
4. Shut water off while brushing teeth.
5. Check for leaky faucets and have them fixed.



6. Run full loads of dishes and laundry.
7. Limit the amount of fertilizer used on plants.
8. Water plants only when necessary.



9. Keep a pitcher of drinking water in the refrigerator.
10. Get involved in water education.

## For more information . . .

Four Township Water Resources Council

[www.ftwrc.org](http://www.ftwrc.org)

- *Four-Township Water Atlas*
- *Mapping Water Table Elevation Using Water Well Record Data: A Study in the Townships of Prairieville and Barry in Barry County and Richland and Ross in Kalamazoo County*

The Groundwater Foundation

[www.groundwater.org](http://www.groundwater.org)

U.S. Geological Survey

- S.J. Rheume. 1990. *Geohydrology and Water Quality of Kalamazoo County, Michigan, 1986-88.*
- Ground Water and Surface Water: A Single Resource  
[water.usgs.gov/pubs/circ/circ1139](http://water.usgs.gov/pubs/circ/circ1139)

MSU Extension

[web2.msue.msu.edu/bulletins/](http://web2.msue.msu.edu/bulletins/)

The Four Township Water Resources Council (FTWRC) is a group of concerned citizens dedicated to protecting water quality in Barry and Prairieville Townships in Barry County, and Richland and Ross Townships in Kalamazoo County, Michigan.

Council members are dedicated to protecting water quality in the four townships. The FTWRC is led by a board of directors from all four townships and citizens from many backgrounds.

The group was organized in 1994 as an informal group to discuss and address common land use and water quality issues on a watershed basis. The FTWRC is a resource for local governments and work closely with government officials to assist with the adoption of land use policies to proactively manage growth for the environmental and economic benefit of the community.

The Council is a Michigan non-profit corporation and donations are deductible under Section 501 (c) (3) of the federal Internal Revenue Code.

