East Orange Water Department

Source Water Assessment Summary

A State Review of Potential Contamination Sources Near Your Drinking Water

The Department of Environmental Protection (DEP) has conducted an assessment of the water sources that supply each public water system in the state, including yours. The goal of this assessment was to measure each system's susceptibility to contamination, not actual (if any) contamination measured in a water supply system.

The assessment of your water system, the *East Orange Water Department*, involved:

- Identifying the area (known as the source water assessment area) that supplies water to your public drinking water system;
- Inventorying any significant potential sources of contamination in the area; and
- Analyzing how susceptible the drinking water source is to the potential sources of contamination.

DEP evaluated the susceptibility of all public water systems to eight categories of contaminants. These contaminant categories are explained, along with a summary of the results for your water system, on page 3. Page 4 contains a map of your water system's source water assessment area.

A public water system's susceptibility rating (L for low, M for medium or H for high) is a combination of two factors. H, M, and L ratings are based on the potential for a contaminant to be at or above 50% of the Drinking Water Standard or MCL (H), between 10 and 50% of the standard (M) and less than 10% of the standard (L).

- How "sensitive" the water supply is to contamination. For example, a shallow well or surface water source, like a reservoir, would be more exposed to contamination from the surface or above ground than a very deep well.
- How frequently a contaminant is used or exists near the source. This is known as "intensity of use." For example, the types of activities (such as industry or agriculture) surrounding the source.

The susceptibility rating does not tell you if the water source is actually contaminated. The Consumer Confidence Report annually issued by your water utility contains important information on the results of your drinking water quality tests, as required by the federal Safe Drinking Water Act.

Where does drinking water come from?

There are two basic sources of drinking water: ground water and surface water.

Ground water is water found beneath the Earth's surface. Ground water comes from rain and snow seeping into rock and soil. Ground water is stored in underground areas called aquifers. Aquifers supply wells and springs. Wells in New Jersey range from about 15 feet to 2,000 feet deep.

Surface water is the water naturally open to the atmosphere, such as rivers, lakes, streams and reservoirs. Precipitation that does not infiltrate the ground or evaporate into the sky runs off into surface water bodies.

Ground water can seep into a stream, river or other surface water body, recharging surface water bodies. Likewise, under some circumstances, surface water can seep into an adjacent aquifer.

A water system obtains its water from 1) wells drilled into the ground that pump out ground water; 2) devices called surface water intakes placed on a river, stream, reservoir; or 3) both.

What factors may affect the quality of your drinking water source?

A variety of conditions and activities may affect the quality of drinking water source. These include geology (rock and soil types); depth of a well or location of a surface water intake; how the land surrounding the source is used (for industry, agriculture or development); the use of pesticides and fertilizers; and the presence of contaminated sites, leaking underground storage tanks, and landfills.

What steps are being taken now to ensure my drinking water quality?

The DEP has numerous programs in place to maintain and protect the quality of our State's water resources. For example, the Safe Drinking Water Program is designed to ensure that water delivered for human consumption meets DEP's stringent health-based drinking water standards. Additionally, DEP has permitting, waste management, and clean up programs in place to avoid and control potential contamination. Key DEP drinking water protection initiatives will be phased-in over time in Source Water Assessment areas to advance existing program protections.

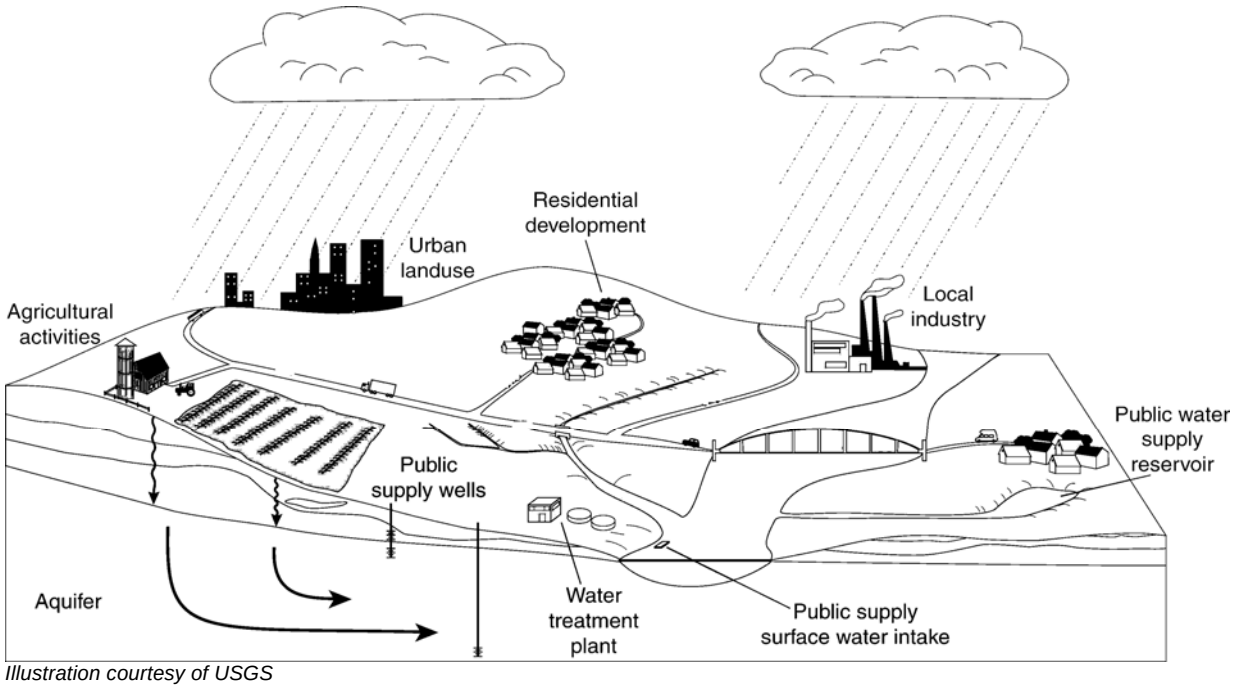


Illustration courtesy of USGS

Among the factors that may affect the quality of drinking water are the type of rock and soil and how the land is used. While some rain and snow evaporates into the sky, most of it runs off into nearby rivers and streams or seeps into the ground. Drinking water comes from underground aquifers or surface water bodies.

What can you and others do to help?

Federal law requires each state to establish and implement a Source Water Assessment Program. While government at the state and local levels can do their part, there are actions that you and your neighbors in homes and businesses can take now to help protect our precious and shared natural resource.

Here's just a few ways you and others can help ensure clean and plentiful water for New Jersey – now and in the future. Join us today for a clean water future.

In your home or business:

- Dispose of waste properly. Some materials such as motor oil, paint, flea collars, and household cleaners have the potential to contaminate source water. Contact your local Department of Public Works for proper household hazardous waste disposal.
- Limit your use of fertilizer, pesticides, and herbicides.

Here are some actions that municipal and county officials/local and county planners can take and you can help encourage and support.

- Manage and work with owners of existing potential contaminant sources to minimize potential contamination.
- Establish regulations prohibiting or restricting certain activities or land uses within the source water assessment area. Take appropriate enforcement action when necessary.
- Update municipal master plans to ensure greater protection.
- Purchase lands or create conservation easements within the source water assessment area.

East Orange Water Department- PWSID # 0705001

East Orange Water Department is a public community water system consisting of 18 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 2 purchased ground water source(s), and 3 purchased surface water source(s).

This system's source water comes from the following aquifer(s) and/or surface water body(s) (if applicable): glacial sand and gravel,basalt,Brunswick aquifer

This system purchases water from the following water system(s) (if applicable): N.J. AMERICAN W C SHORT HILLS,NEWARK WATER DEPT,GLEN RIDGE WD,BLOOMFIELD WATER DEPT,LIVINGSTON WD

Susceptibility Ratings for East Orange Water Department Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report.

The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

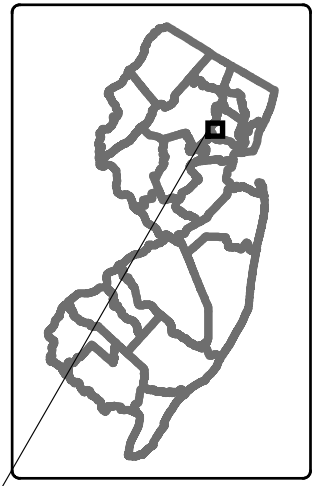
If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

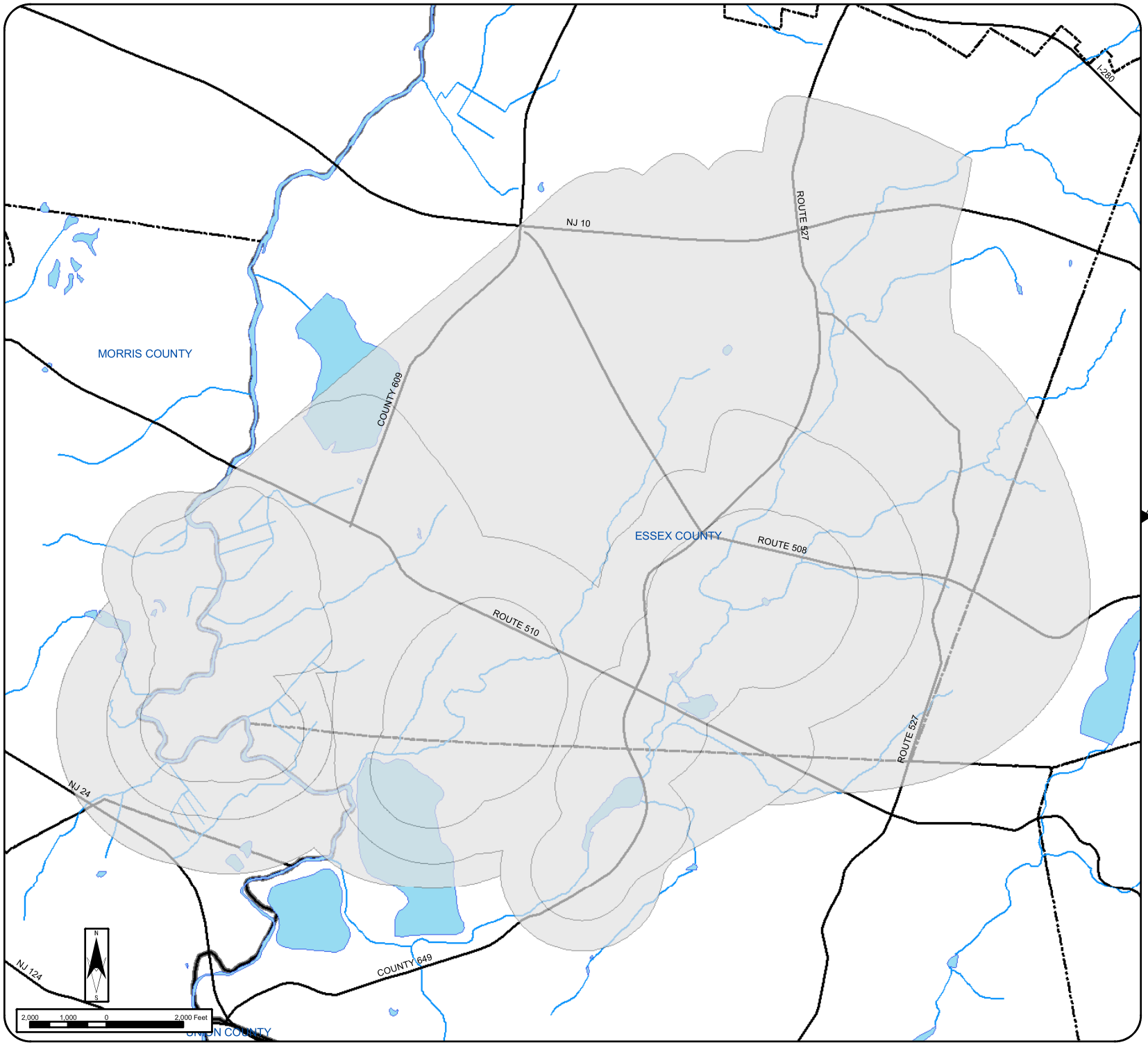
	Pathogens			**Nutrients**			**Pesticides**			**Volatile Organic Compounds**			**Inorganics**			**Radio-nuclides**			**Radon**			**Disinfection Byproduct Precursors**		
Sources	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 18		**18**		**11**	**5**	**2**		**3**	**15**	**14**		**4**	**3**	**15**			**18**		**18**			**9**	**9**	
GUDI - 0																								
Surface water intakes - 0																								

- Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.
- Nutrients: Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.
- Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.
- Pesticides: Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.
- Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.
- Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.
- Radon: Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to http://www.nj.gov/dep/rpp/radon/index.htm or call (800) 648-0394.
- Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

East Orange Water Department

Source Water Assessment Areas





Legend

- Source Water Areas
- Water Bodies
- Streams
- NJDOT Major Roads
- Municipalities
- Counties

To obtain your water system Source Water Assessment Report, Potential Contaminant Source Inventory, and additional information please go to www.state.nj.us/dep/swap or call (609) 292-5550. August, 2004