

HAMILTON TOWNSHIP MUA

2005

ANNUAL

WATER QUALITY REPORT

***FOR REPORTING PERIOD
JANUARY 1, 2004 – DECEMBER 31, 2004***

2005 ANNUAL WATER QUALITY REPORT

We are pleased to present our fifth *Annual Drinking Water Quality Report* to you covering the period from *January 1st to December 31st, 2004*. The Federal Safe Drinking Water Act (SDWA) requires that utilities issue an annual Consumer Confidence Report. We designed this report to inform you about the quality of the water we deliver to you every day.

GENERAL OVERVIEW

- The Hamilton Township Municipal Utilities Authority (HTMUA) was created by Township Ordinance on October 15, 1962. Since then its primary commitment has been supplying Hamilton Township with quality drinking water and wastewater disposal. The Authority is pleased to report that our water meets or exceeds the standards of the Safe Drinking Water Act.
- The purpose of this annual report is to better inform you of the source of your water and how it is treated and tested. A chart is included to show that all contaminants detected in your water are within United States Environmental Protection Agency (USEPA) and New Jersey Department of Environmental Protection (NJDEP) guidelines.
- The water system area comprises approximately forty (40) square miles. Currently there are four (4) municipal wells and treatment facilities. Water is drawn from three (3) different groundwater aquifers (*water containing ground strata*): the Kirkwood, Cohansey and the 800' Sands.
- All water is chlorinated for disinfection of viruses and bacteria. Hydrated lime is added for pH adjustment where needed. The water is aerated for removal of carbon dioxide, volatile organics and hydrogen sulfides. To reduce the water's corrosiveness, zinc pyrophosphate is added to all wells, and filtration for iron removal is used at one well. All well facilities are monitored twice daily to ensure that proper treatment is maintained.

INFORMATION ABOUT YOUR DRINKING WATER

- This report contains important information about your drinking water. If you do not understand it, please have someone translate it for you.
- Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

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FACTS ABOUT WATER

- Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).
- The HTMUA's water supply is from groundwater wells. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from various sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm runoff, and septic systems.
- Radioactive substances, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

DID YOU KNOW?

- The earth's water is 97% salt water found in seas and oceans; 2% is frozen, which leaves only 1% readily usable for consumption.
- Average daily residential (per person) consumption is about eighty (80) gallons of water (30,000 gallons per year) of which only 5% is consumed.
- Chlorine is considered one of the most effective disinfectants in killing micro-organisms and has been treating drinking water for nearly one hundred years. Dechlorinated water (such as after home filtering) should be considered perishable and should be kept refrigerated.
- The U.S. bottled water industry is less regulated than municipal drinking water.

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HTMUA WATER FACTS

- The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water systems, which is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP Bureau of Safe Drinking Water at 609-292-5550. A copy of the summary is included in this report.
- The USEPA requires the monitoring of eighty (80) contaminants in drinking water. Listed are those that were detected in our water source. (*The HTMUA samples for over one hundred [100] contaminants.*) Sampling results in this report are from the 2004 calendar year unless indicated otherwise.
- The HTMUA's Public Water System Identification Number (PWSID#) is 0112001.

INORGANIC CHEMICALS

SUBSTANCE (Units)	MCL	MCLG	LEVEL DETECTED	<u>RANGE</u> From/To	TYPICAL SOURCE
Barium (PPM)	2.0	2.0	0.032	N.D. to 0.032	Erosion of natural deposits
Copper (PPM)(Action Level)	1.3	1.3	0.14 (90 th percentile = 0.10)	No sites exceeded Action Level	Corrosion of house plumbing
Lead (PPB)(Action Level)	15.0	0.0	14.2 (90 th percentile)	2 samples above Action Level	Corrosion of house plumbing
Mercury (PPB)	2.0	2.0	0.3	N.D. to 0.3	Erosion of natural deposits
Nitrates (PPM)	10.0	10.0	0.96	N.D. to 0.96	Fertilizer runoff; wastewater Discharges; erosion of natural deposits

ORGANIC CHEMICALS

SUBSTANCE (Units)	MCL	MCLG	LEVEL DETECTED	HIGHEST AVERAGE	<u>RANGE</u> From/To	TYPICAL SOURCE
Trihalomethane (PPB)	80.0	N/A	27.63	12.04	4.3 to 27.6	A by-product of drinking water disinfection with chlorination
Haloacetic Acid (PPB)	60.0	N/A	2.77	0.29	N.D. to 2.77	A by-product of drinking water disinfection with chlorination

RADIONUCLIDES

SUBSTANCE (Units)	MCL	MCLG	LEVEL DETECTED (State Sampling Period 2003)	<u>RANGE</u> From/To	TYPICAL SOURCE
Total Alpha (pCi/L)	15.0	0	2.7	0.73 to 2.7	Erosion of natural deposits

MICROBIOLOGICAL SUBSTANCES

SUBSTANCE (Units)	MCL	MCLG	LEVEL DETECTED	TYPICAL SOURCE
Total Coliform Bacteria (Pos. or Neg.)	1 pos. monthly sample	0 pos. per month	1 positive in 253 samples – resampling indicated negative	Naturally present in the environment

OTHER SUBSTANCES

SUBSTANCE (Units)	MCL	MCLG	RUL	LEVEL DETECTED	<u>RANGE</u> <u>From/To</u>	TYPICAL SOURCE
Iron (PPM)		N/A	0.3	0.3	0.09 to 0.3	Erosion of natural deposits
Sodium (PPM)			50.0	10.0	2.7 to 10.0	Erosion of natural deposits; salt water intrusion
Manganese (PPB)		N/A	50.0	27.8	N.D. to 27.8	Erosion of natural deposits
Sulfate (PPM)		N/A	250	10.4	1.3 to 10.4	Erosion of natural deposits
Fluoride (PPM)		N/A	2.0	0.16	.D. to 0.16	Erosion of natural deposits

DEFINITIONS:

Maximum Contaminant Level (MCL): *The highest level of a contaminant allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.*

Maximum Contaminant Level Goal (MCLG): *The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.*

Method Detection Limits (MDL): *Smallest amount that can be detected by laboratory instruments*

Recommended Upper Limit (RUL): *The level of a secondary contaminant considered acceptable up to this amount.*

Parts Per Million (PPM): *One part in one million parts of water
(Comparisons would be one second in 12 days, one inch in 16 miles or one cent in \$10,000)*

Parts Per Billion (PPB): *One part in one billion parts of water
(Comparisons would be one second in 32 years, one inch in 16,000 miles or one cent in \$10,000,000)*

Treatment: *A required process intended to reduce the level of a contaminant in drinking water (aerated)*

PicoCuries Per Liter (pCi/L): *One unit of radioactivity (0.037 nuclear disintegrations per second) in one liter of water*

Action Level: *The concentration of a contaminant which, if exceeded (90th percentile), triggers treatment or other requirements which a water system must follow.*

N/A: *Not available*

N.D.: *None detected*

HEALTH NOTES

Vulnerable Populations

- Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Special Considerations Regarding Children, Pregnant Women, Nursing Mothers, and Others

- Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects of concern. If there is sufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

BARIUM: Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

COPPER: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal physician.

FLUORIDE: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

IRON: Iron occurs naturally in South Jersey ground waters. Our source water with iron levels above the recommended upper limits is treated to reduce those levels and minimize the adverse effects iron may have. The recommended upper limit for iron is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the recommended upper limit could develop deposits of iron in a number of organs of the body.

LEAD: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home plumbing. If you are concerned about elevated lead levels in your home water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

MANGANESE: The recommended upper limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels that would be encountered in drinking water.

MERCURY: Some people who drink water containing inorganic Mercury well in excess of the MCL over many years could experience kidney damage.

NITRATE: Nitrate in drinking water at levels above 10ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

RADIONUCLIDES: Certain minerals are radioactive and may emit a form of radiation known as Alpha Emitters. Some people who drink water containing Alpha Emitters in excess of the MCL over many years may have an increased risk of getting cancer.

SODIUM: For healthy individuals, the sodium intake from water is not important because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit may be of concern to individuals on a sodium-restricted diet.

SULFATE: Levels above the recommended MCL can cause diarrhea and dehydration.

TRIHALOMETHANE & HALOACETIC (DISINFECTION BYPRODUCTS): Some people who drink water containing Trihalomethanes and Haloacetic Acid in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems, and may have an increased risk of getting cancer.

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- FOR ADDITIONAL INFORMATION -

- If you desire more information about your water, you can contact the HTMUA office at 609-625-1872 or attend the monthly Authority meetings held on the first Thursday of each month at 7:30 PM at the HTMUA office building, 6024 Ken Scull Avenue, Mays Landing, New Jersey. During these meetings, public participation is invited whereby your questions and concerns will be addressed.

Additional information can also be obtained from the USEPA Safe Drinking Water Hotline (1-800-426-4791) and from the NJDEP Bureau of Safe Drinking Water (609-292-5550).

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- WATER CONSERVATION & PROTECTION -

- Wait until you have a full load of laundry before running the machine to save both water and energy.
- Only run your dishwasher when it is full to make the best use of water, energy and detergent.
- Take a quick shower rather than a bath and save an average of 20 gallons of water.
- Repair leaks as soon as possible. A leaking toilet can consume 200 gallons of water a day.
- Water your lawn in the evening when evaporation rates are lower.
- Utilize drought-resistant vegetation for landscaping.
- Wash your vehicle at a water recycling car wash.
- The Hamilton Township MUA encourages everyone to utilize water wisely, and now with greater emphasis on security issues, to please alert us to anything that may adversely affect the supply of quality and safe water to our customers.

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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 the HTMUA. 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 Hamilton Township MUA*, 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 in the following pages and include a summary of the results for HTMUA's water system and a map of the 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.

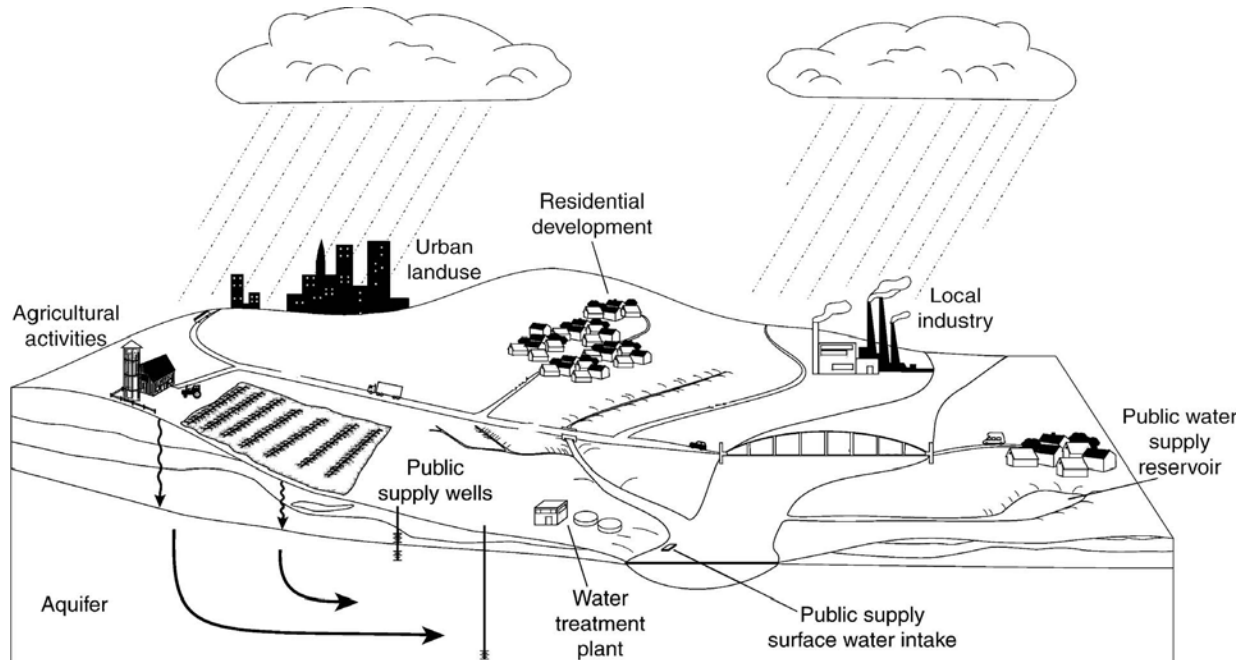


Illustration courtesy of USGS

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.

Hamilton Township MUA-PWSID # 0112001

Hamilton Township MUA is a public community water system consisting of 4 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 0 purchased ground water source(s), and 0 purchased surface water source(s).

This system's source water comes from the following aquifer(s) and/or surface water body(s) (if applicable): Atlantic City "800-foot" sand aquifer, Kirkwood-Cohansey water-table aquifer system

Susceptibility Ratings for Hamilton Township MUA 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.

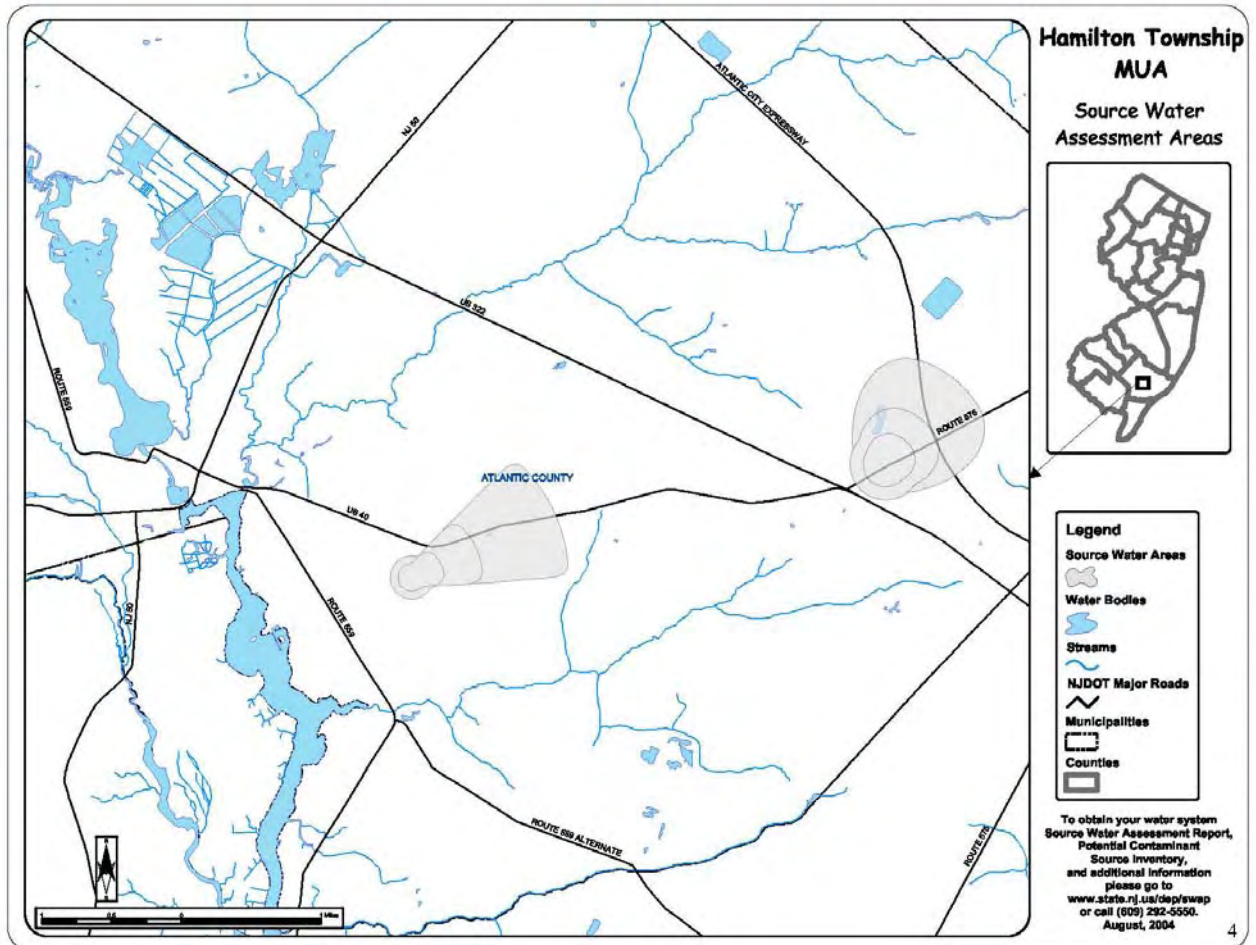
If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for 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.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	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 - 4			4		2	2			4	2		2		2	2	2		2		2	2	2	2	
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

Hamilton Township MUA

Source Water Assessment Areas



ATLANTIC COUNTY

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



*Hamilton Township Municipal Utilities Authority
6024 Ken Scull Avenue
Mays Landing, NJ 08330-1854
(609)625-1872, fax (609)625-0855*

HTMUA Board Members

*Walter N. Hand, Chairman
James E. Sacchinelli, Vice-Chairman
Nathan I. Hall, Secretary
Roger J. Silva, Treasurer
Robert J. Campbell, Member
Patricia E. Collins, Alternate #1
Brenda Morrison, Alternate #2*

*Stephen R. Blankenship, P.E., Executive Director
Robert D. Young, Superintendent*

*The HTMUA's public meetings are held the first Thursday of each month.
Meetings begin at 7:30 P.M. in the Meeting Room of the HTMUA's
Administration Building located at 6024 Ken Scull Avenue, Mays Landing.*

**HAMILTON TOWNSHIP
MUNICIPAL UTILITIES AUTHORITY
6024 Ken Scull Avenue
Mays Landing, NJ 08330-1854**

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