



# WASHINGTON TOWNSHIP MUNICIPAL UTILITIES AUTHORITY

• WASTEWATER TREATMENT • PUBLIC WATER SUPPLY •

## Drinking Water Quality Report 2010 Report for Test Results from 2009

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water.

**We are pleased to report that our drinking water is safe and meets federal and state requirements.**

### WHERE DOES MY WATER COME FROM?

The Washington Township MUA operates two separate water systems which supply water to portions of the township. The map illustrates the location of the water systems that are operated by the MUA. All of the water supplied to our customers currently come from a total of fourteen wells.

### DEFINITIONS

In this report you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

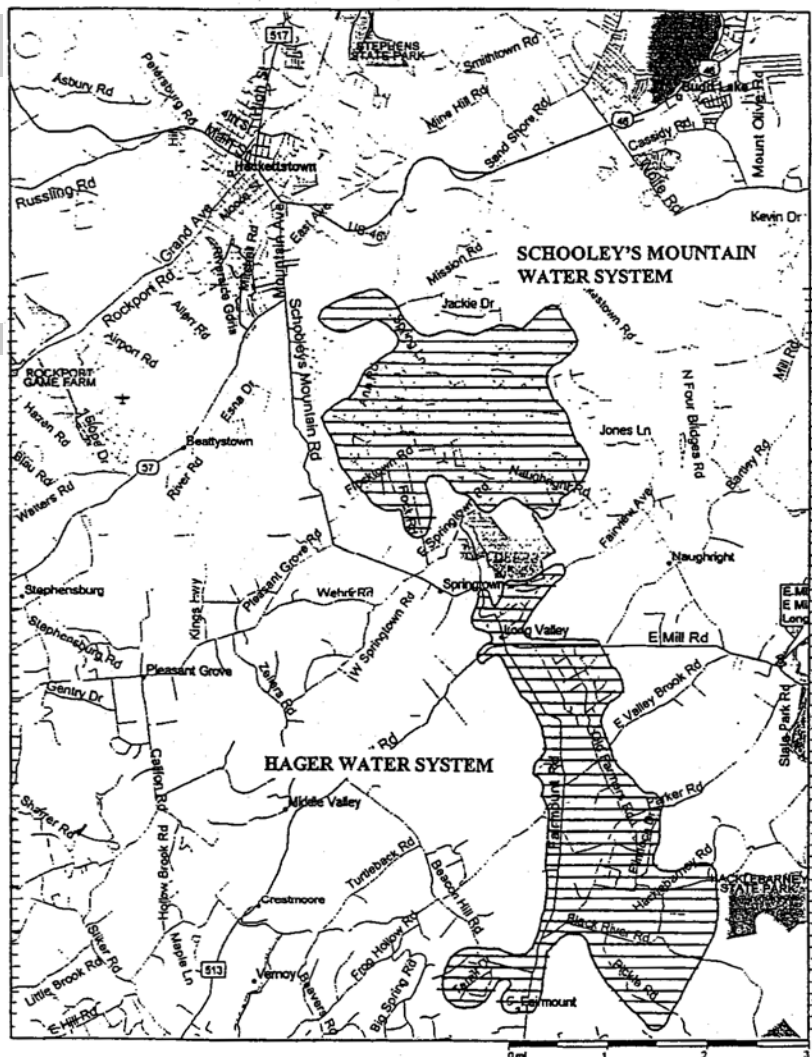
Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water.

MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.



**MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for seventy years to have a one-in-a-million chance of having the described health effect.**

Recommended Upper Limit - (RUL) Recommended maximum concentration of secondary contaminants. RUL's are recommendations, not mandates.

Secondary Contaminant - Substances that do not have an

impact on health. Secondary contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

### MONITORING OF THE WATER

The Washington Township MUA routinely monitors for constituents in your drinking water according to Federal and State laws. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Our system received a monitoring waiver for asbestos.

### SPECIAL CONSIDERATIONS

**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, 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).**

### SUBSTANCES TO BE EXPECTED IN DRINKING WATER

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. It can also 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 plants, septic 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 projection, mining, or farming.
- Pesticides and herbicides, which may come from a variety of 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. They can also come from gas stations, urban storm water runoff, and

septic systems.

- Radioactive contaminants 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.

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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

### ADDITIONAL TREATMENT

To ensure the continued quality of our water, we treat it in several ways. All water sources are treated with chemicals to adjust the natural pH of the water and provide disinfection of the source water. We also treat the water supplied to a portion of the Schooley's Mountain water system with polyphosphate to sequester iron and manganese to prevent dirty water and staining of laundry.

### RADON

In addition to monitoring for the constituents required by federal and state regulations, we monitored for radon in our source water supplies during 2006. We detected radon in the finished water supply at all but one of our source water supplies. The results are included in the Table of Non-Regulated Substances. There is no federal regulation for radon levels in drinking water. Of greater concern than the radon in the concentrations detected in the MUA's source water supplies is the radon detected in indoor air. Radon entering the home through tap water will in most cases be a small source of radon in indoor air. Exposure to air transmitted radon over a long period of time may cause adverse health effects. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. The Washington Township Health Department has radon test kits for purchase. You can contact them at 908-876-3650. For additional information, call the EPA's Radon Hotline (800-SOS-RADON) or NJDEP Radon Section (800-648-0394).

## WHAT'S IN MY WATER

The tables below show the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2009. **As you can see, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State**

**requirements.** We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water is safe at these levels.

### SCHOOLEY'S MOUNTAIN TEST RESULTS

Contaminant	Violation Y/N	Level Detected R = Range HD = Highest Detected	Units of Measurement	MCLG	MCL [RUL]	Likely Source of Contamination
<b>Radioactive Contaminants</b>						
Alpha Emitters Test results Yr. 2006	N	R= 0.2 – 4.9 Average = 0.6	pCi/1	0	15	Erosion of natural deposits
Combined Radium 228 & 226 Test results Yr. 2006	N	R = ND – 0.4 Average = 0.07	pCi/1	0	5	Erosion of natural deposits
<b>Inorganic Contaminants:</b>						
Antimony Test results Yr. 2009	N	R = ND – 0.16 HiD = 0.16	ppb	2.0	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic Test results Yr. 2009	N	R = ND – 0.53 HiD= 0.53	ppb	0.004	5	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium Test results Yr. 2009	N	R = 0.006 – 0.044 HD= 0.044	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium Test results Yr. 2009	N	R = ND – 0.05 HD = 0.05	ppb	4	4	Discharge from metal refineries, coal-burning factories, and electrical, aerospace, and defense industries
Cadmium Test results Yr. 2009	N	R = ND – 0.05 HD = 0.05	ppb	5	5	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chromium Test results Yr. 2009	N	R = ND – 0.24 HD = 0.24	ppb	100	100	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Copper Test results Yr. 2009	N	R = 0.001 – 0.509 HD = 0.509 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Flouride Test results Yr. 2009	N	R = ND – 0.208 HD = 0.208	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Test results Yr. 2009	N	R = 0.09 – 3.00 HD = 3.00 No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic) Test results Yr. 2009	N	R = ND – 0.096 HD = 0.096	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel Test results Yr. 2009	N	R = ND – 2.4 HD = 2.4	ppb	No MCLG	No MCL	Erosion of natural deposits; discharge from metal factories

## SCHOOLEY'S MOUNTAIN TEST RESULTS

Contaminant	Violation Y/N	Level Detected R = Range HD = Highest Detected	Units of Measurement	MCLG	MCL [RUL]	Likely Source of Contamination
Nitrate (as Nitrogen) Test results Yr. 2009	N	R = ND – 5.68 HD = 5.68	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yr. 2009	N	R = ND – 3.5 HD = 3.5	ppb	50	50	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
<b>Volatile Organic Contaminants</b>						
1,2-Dichlorobenzene Test results Yr. 2009	N	R = 99 – 109 HD = 109	ppb	600	600	Discharge from industrial chemical factories
Toluene Test results Yr. 2009	N	R = ND – 3.5 HD = 3.5	ppb	1,000	1,000	Discharge from petroleum and chemical factories; underground gas tank leaks
Xylenes [total] Test results Yr. 2009	N	R = ND – 0.89 HD = 0.89	ppb	1,000	1,000	Discharge from petroleum and chemical factories; fuel solvent
<b>Volatile Organic Contaminants / Disinfection Byproducts</b>						
THM Trihalomehtanes Total Trihalomethanes Test results Yr. 2009	N	Average = 1.1	ppb	N/A	80 running annual average	By-product of drinking water disinfection
HAA5 Haloacetic acids Total Haloacetic acids Test results Yr. 2009	N	Average = 0.13	ppb	N/A	60 running annual average	By-product of drinking water disinfection
<b>Secondary Contaminant</b>						
Iron Test results Yr. 2009	>RUL	R = ND - 0.352 HD = 0.352	ppm	N/A	0.3	Leaching from natural deposits; industrial wastes
Manganese Test results Yr. 2009	>RUL	R = ND - 0.155 HD = 0.155	ppm	N/A	0.05	Leaching from natural deposits

## HAGER SYSTEM TEST RESULTS

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL [RUL]	Likely Source of Contamination
<b>Radioactive Contaminants</b>						
Alpha Emitters Test results Yr. 2006	N	R = 0.1 – 10 Average = 2	pCi/1	0	15	Erosion of natural deposits
Combined Radium 228 & 226 Test results Yr. 2006	N	R = 0.05 – 0.8 Average = 0.3	pCi/1	0	5	Erosion of natural deposits
<b>Inorganic Contaminants:</b>						
Antimony Test results Yr. 2009	N	R = 0.21 – 0.60 HiD = 0.16	ppb	2.0	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic Test results Yr. 2009	N	R = 0.14 – 2.8 HiD= 2.8	ppb	0.004	5	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium Test results Yr. 2009	N	R = 0.019 – 0.048 HD= 0.048	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

## HAGER SYSTEM TEST RESULTS

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL [RUL]	Likely Source of Contamination
Cadmium Test results Yr. 2009	N	R = ND – 0.6 HD = 0.6	ppb	5	5	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chromium Test results Yr. 2009	N	R = 0.44 – 0.57 HD = 0.57	ppb	100	100	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Copper Test results Yr. 2009	N	R = 0.033 – 0.335 HD = 0.335 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2009	N	R = 0.13 – 3.0 HD = 3.0 No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic) Test results Yr. 2009	N	R = ND – 0.044 HD = 0.044	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel Test results Yr. 2009	N	R = 0.76 – 2.3 HD = 2.3	ppb	No MCLG	No MCL	Erosion of natural deposits; discharge from metal factories
Nitrate (as Nitrogen) Test results Yr. 2009	N	R = 1.12 – 2.78 HD = 2.78	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yr. 2009	N	R = 1.4 – 4.6 HD = 4.6	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium Test results Yr. 2009	N	R = ND – 0.06 HD = 0.06	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
<b>Volatile Organic Contaminants</b>						
1,2-Dichlorobenzene Test results Yr. 2009	N	R = 94 – 112 HD = 112	ppb	600	600	Discharge from industrial chemical factories
<b>Volatile Organic Contaminants / Disinfection Byproducts</b>						
THM Trihalomehtanes Total Trihalomethanes Test results Yr. 2009	N	Average = 1.26	ppb	N/A	80 running annual average	By-product of drinking water disinfection
HAA5 Haloacetic acids Total Haloacetic acids Test results Yr. 2009	N	Average = 0.31	ppb	N/A	60 running annual average	By-product of drinking water disinfection
<b>Secondary Contaminant</b>						
Sodium Test results Yr. 2009	>RUL	Range = 8.0 - 63.2	ppm		[50]	

## HEALTH EFFECTS

### Radioactive Contaminants

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

**Combined Radium 226 & 228:** Some people who drink water

containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

### Inorganic Contaminants

**Antimony:** Some people who drink water containing antimony in excess of the MCL over many years may experience increases in blood cholesterol and decreases in blood sugar.

**Arsenic:** Some people who drink water containing arsenic in

excess of the MCL over many years may experience skin damage or circulatory system problems, and may have an increased risk of getting cancer.

**Barium:** Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure.

**Beryllium:** Some people who drink water containing beryllium in excess of the MCL over many years may develop intestinal lesions.

**Cadmium:** Some people who drink water containing cadmium in excess of the MCL over many years may experience kidney damage.

**Chromium:** Some people who use water containing chromium in excess of the MCL over many years may experience allergic dermatitis.

**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 may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

**Lead:** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Washington Township MUA is responsible for providing high quality drinking water, but can not control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 second to 2 minutes before using water for drinking and cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water hotline or at <http://www.epa.gov/safewater/lead>.

**Mercury:** Some people who drink water containing mercury in excess of the MCL over many years may experience mental disturbances, or impaired physical coordination, speech and hearing.

**Nickel:** Some people who drink water containing nickel in

excess of the MCL over many years may experience liver and heart effects.

**Nitrate:** Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.

**Selenium:** Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years may experience hair or fingernail losses, numbness in fingers or toes, or circulation system problems.

**Thallium:** Some people who drink water containing thallium in excess of the MCL over many years may experience hair loss, changes in their blood, or kidney, intestinal, or liver problems.

### Volatile Organic Contaminants

**1,2-Dichlorobenzene:** Some people who use water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

### Volatile Organic Contaminants / Disinfection Byproducts

**TTHMs (Total Trihalomethanes):** Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.

**HAA5s (Haloacetic acids):** Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

### Secondary Contaminants

**Iron:** Aesthetic and cosmetic effects only.

**Manganese:** Aesthetic and cosmetic effects only.

**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 sodium restricted diet.

## BOTH SYSTEMS

Regulated Disinfectants	Level Detected	MRDL	MRDLG
Chlorine	Average = 0.5	4.0 ppm	4.0 ppm

**Maximum Residual Disinfectant Level (MRDL)** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Goal (MRDLG)** The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Non-Regulated Substances	Level Detected	Units	Likely Source
Radon	Range = ND - 2320	pCi/L	Erosion of natural deposits.

We constantly monitor the water supply for various contaminants. We have detected radon in the finished water supply. There is no federal regulation for radon levels in

drinking water. Exposure to air transmitted radon over a long period of time may cause adverse health effects.

## NOTICE ON TESTING

### Monitoring Requirements Not Met in Both Systems

Within the past year our water system violated a drinking water testing standard. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2009 we inadvertently did not complete some of testing required for nitrates and, therefore, cannot be sure that the nitrates standard of our drinking water was met during that time.

What should you do? There is nothing you need to do.

The table below lists the contaminant we did not properly test for during the last year, when samples should have been taken, and the date on which follow-up samples are required to be taken.

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	When samples will be taken
Nitrate (as N)	1 Sample at each Well per 3 year period	3 of 8 required	1/1-12/31 2009	1/1-12/31 2012

What is being done? We will continue to take and test samples for nitrates as require by NJDEP.

For more information, please contact Paul Costic at (908) 876-3145 or 46 E. Mill Road Long Valley, NJ 07853.

## PROTECTION OF WATER SOURCES

The New Jersey Department of Environmental Protection has completed and issued the Source Water Assessment Reports and Summaries for these public water systems, which are available at [www.state.nj.us/dep/swap](http://www.state.nj.us/dep/swap) or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. The source water assessment performed on our sources determined the following which is illustrated in the table below. This table shows the susceptibility ratings for the seven contaminant categories (and radon) for each source in our systems. The table provides the number of wells that rated high (H), medium (M), or low(L) for each contaminant

category. The seven contaminant categories are defined below the tables.

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.

### SCHOOLEY'S MOUNTAIN WATER SYSTEM

Sources	Pathogens			Nutrients			Pesticides			Organic			Inorganics			Radio-nuclides			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 - 10	1	1	6	6	1	1	3	5				8			8	1	6	1	7	1				8
GUDI - None																								
Surface water intakes -None																								

### HAGAR WATER SYSTEM

Sources	Pathogens			Nutrients			Pesticides			Organic			Inorganics			Radio-nuclides			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 - 7	1	5		4	2			2	4			6			6	2	4		6			2	4	
GUDI -None																								
Surface water intakes - None																								

- 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 found when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

## QUESTIONS?

We want our customers to be informed about their water utility. If you have any questions about this report or concerning your water utility, please contact the MUA at 908-876-3145. If you want to learn more, please visit our web site at [www.wtmua.org](http://www.wtmua.org) or attend any of our regularly scheduled

MUA meetings at 46 East Mill Road, Long Valley. Meetings are held on the first Wednesday of each month at 7:30 p.m. A complete meeting schedule is posted on our website and the bulletin board outside the offices at 46 East Mill Rd.