

Greenbrook Estates (PWSID#: NJ1615002)
Woodland Avenue, West Milford, NJ 07480
Year 2013 Annual Water Quality Report

What's The Quality of Your Water?

West Milford Township MUA is proud to supply you with this year's Water Quality Report required by the State of New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA). The tables in this report show the results of our water quality analysis in the year 2013. Every regulated contaminant detected in the water, even in the minutest traces, is listed. The table contains the name of each highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), usual sources of such contamination, definitions that explain what was tested, and a key to the units of measurement. *The data tables in this report show only the substances **detected** in your water; other substances may have been tested and not detected.*

The EPA requires monitoring for over 80 drinking water contaminants. The contaminants listed in the table on the next page reflect only the contaminants detected in your water for the monitoring period January 1 to December 31, 2013. We routinely monitor for contaminants in your drinking water according to federal and state laws. The state allows us to monitor for some contaminants less than once per year because the concentrations of those contaminants do not change frequently. Some of our data, though representative, may be more than one year old.

Sources of Supply

Greenbrook Estates draws its water from 3 groundwater wells. These wells utilize corrosion control, disinfection, and iron & manganese removal in the treatment process. It has 188 service connections and serves approximately 600 people per day.

GENERAL DRINKING WATER INFORMATION:

Water Sources

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:

- *Biological* - may come from human, agricultural, or wildlife sources.
- *Inorganic* - can be natural, from storm run-off, or from industrial or domestic wastewater discharges.
- *Pesticides and herbicides* - may come from agricultural, storm run-off or residential use.
- *Organic chemicals* - may come from industrial or domestic processes, storm run-off, and septic systems.
- *Radioactive materials* - can be naturally occurring or the result of mining or other human activities.

Presence of Contaminants

The presence of contaminants does not necessarily indicate that 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 (1-800-426-4791). In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

Immuno-Compromised Persons

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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

GREENBROOK ESTATES WATER QUALITY TABLE

Contaminant	MCL Violation Y/N	Level Detected via # of Samples	Unit of Measurement	MCL (Highest Level Allowed)	MCLG (Goal)	Potential Source
Total Coliform Test Results Year: 2013	N	1 Present Out of 20 Samples	Absent or Present	0	0	Leaking septic system, runoff from streams
Nitrate Test Results Year: 2013	N	1.9 3 Samples	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Lead Test Results Year: 2013	N	6 (90 th Percentile) 10 Samples	ppb	15 (Action Limit)	0	Corrosion of household plumbing
Copper Test Results Year: 2013	Y	3.5 (90 th Percentile) 10 Samples	ppm	1.3 (Action Limit)	1.3	Corrosion of household plumbing
Mercury Test Results Year: 2012	N	Average: 0.1 3 Samples	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
THM Test Results Year: 2012	N	Average: 1.3 3 Samples	ppb	80	N/A	Disinfectant Byproducts
Chlorine Residual Test Results Year: 2013	N	Average: 0.3 Range: 0.1 – 1.1	ppm	MRDL 4	MRDLG 4	Water additive used to control microbes

Radiologicals

Contaminant	MCL Violation Y/N	Average Detected Level via # of Samples	Unit of Measurement	MCL	MCLG	Potential Source
Gross Alpha Test Results Year: 2012	N	4.8 2 Samples	pCi/L	15	0	Erosion of natural deposits
Combined Radium Test Results Year: 2012	N	1.1 2 Samples	pCi/L	5	0	Erosion of natural deposits

Secondary Contaminants

Contaminant	Average Level Detected	Range of Detections	Unit of Measurement	RUL	Potential Source
Aluminum (2012)	0.06	ND – 0.2	ppm	0.20	Naturally Occurring
Chloride (2012)	43	41 – 58	ppm	250	Naturally Occurring
Hardness (2012)	82	41 – 156	ppm	250	Naturally Occurring
Iron (2012)	0.1	ND – 0.4	ppm	0.30	Naturally Occurring
Manganese (2012)	0.09	ND – 0.26	Ppm	0.05	Naturally Occurring
Sodium (2012)	28	18 – 35	ppm	50	Naturally Occurring
Sulfate (2012)	12	8 – 20	ppm	250	Naturally Occurring
Total Dissolved Solids (2012)	112	66 - 174	ppm	500	Naturally Occurring

How to read this report:

Word, Acronym, Symbol or Note	Definition
Y/N	Yes/No
AL	Action Level. The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirements, which a water system must follow.
CDC	Centers for Disease Control
EPA	United States Environmental Protection Agency.
MCL	Maximum Contaminant Level. 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.
MCLG	Maximum Contaminant Level Goal. 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.
MRDL	Maximum Residual Disinfectant Level – The highest level of a disinfectant allowed in drinking water.
MRDLG	Maximum Residual Disinfectant Level Goal – 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 contaminants.
N/A	Not applicable
NJDEP	New Jersey Department of Environmental Protection
ND	Not detected
pCi/L	The curie is a unit of radioactivity. This is measured as Picocuries Per Liter.
ppb	Parts per billion. Means 1 part per 1,000,000,000 (same as micrograms per liter) and correspond to 1 penny in \$10 million.
ppm	Parts per million. Means 1 part per 1,000,000 parts (same as milligrams per liter) and corresponds to 1 penny in \$10,000.
RUL	Recommended Upper Limit

Health Effects of Detected Contaminants:

Aluminum: Large aluminum intake may be connected with nerve damage. Particularly people with kidney damage are susceptible to aluminum toxicity and there is a risk of allergies. A correlation between aluminum uptake and an increased number of Alzheimer cases is suspected. Increased aluminum intake may also cause osteomalacia.

Chloride: Chloride occurs naturally in water and is monitored as a secondary contaminant. Secondary contaminants are aesthetic (taste and odor) rather than health risks; however, in high concentrations sulfate can cause Diarrhea in some people.

Chlorine: Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Coliform Bacteria: Coliform Bacteria are common in the environment and are generally not harmful. The presence of these bacteria in drinking water is usually the result of a problem with the treatment system or the pipes that distribute the water, and indicates that the water may be contaminated with germs that may cause disease.

Copper: Copper is an essential nutrient, but some people who drink water that contains copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water that contains 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 doctor.

Gross Alpha (48 hour): 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.

Hardness: Water hardness is the traditional measure of the capacity of water to react with soap and producing lather. Hard water often produces a noticeable deposit of precipitate (e.g. insoluble metals, soaps or salts) in containers, including “bathtub ring”.

Iron: The recommended upper limit for iron is based on unpleasant taste of 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: 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. This water system is responsible for providing high water quality, but cannot 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 seconds to 2 minutes before using water for Drinking or cooking.

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 which 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 a levels above 10 ppm 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.

Radium: 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.

Sodium (Na): Naturally occurring mineral. Sodium is essential for good health. Certain medical conditions however, require sodium intake monitoring. Excessive sodium can adversely affect high blood pressure, heart disease or diabetes. Contact your physician for further information.

Sulfate: Sulfate occurs naturally in water and is monitored as a secondary contaminant. Secondary contaminants are aesthetic (taste and odor) rather than health risks; however, in high concentrations sulfate can cause Diarrhea in some people.

THMs (Trihalomethanes): Some people who drink water containing trihalomethanes 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.

Total Dissolved Solids: (TDS) in drinking water is not a health hazard. The recommended upper limit has been established based on the aesthetic properties of water. Water high in TDS may taste salty or brackish. High TDS may also indicate that other ions naturally present in water may be above established regulatory levels.

Violations

Greenbrook Estates incurred a violation in September of 2013 for exceeding the action level for copper due to low pH levels. Low pH levels cause corrosion of household plumbing materials. The WMMUA is working on optimizing the treatment units which control pH levels for our water system.

Source Water Assessment:

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Protection Report and Summary for this public water system, which is available at www.nj.gov/dep/watersupply/swap/creport.htm or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550. The table below illustrates the susceptibility rating for each individual source for each of the contaminant categories at this water system. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report. NJDEP considered all surface water highly susceptible to pathogens. For the purpose of the Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. If the system is rated highly susceptible for a contaminant category, it does not mean that 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, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings. If you have questions regarding the source water assessment report or summary, please contact the Bureau of Safe Drinking Water at 609-252-5550.

<u>Source Name</u>	<u>Pathogens</u>	<u>Nutrients</u>	<u>Pesticides</u>	<u>VOCs</u>	<u>Inorganics</u>	<u>Radionuclides</u>	<u>Radon</u>	<u>DBPs</u>
	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H	<i>Ratings</i> L / M / H
3 Wells	2 / 1	1 / 2	3	1 2	3	3	3	3

Susceptibility ratings for a public water system are based on the potential for a contaminant to be:

- At or above 50% of the Drinking Water Standard (MCL) = **(H) High**
- Between 10 and 50% of the Drinking Water Standard (MCL) = **(M) Medium**
- Less than 10% of the Drinking Water Standard (MCL) = **(L) Low**

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, and are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds (VOCs): 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.

(DBPs) Disinfectant Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when other disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

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