



Borough of Ringwood

2010 Water Quality Report

June, 2011

Dear Water Customer:

It is our pleasure to provide you with the 2010 Water Quality Report published for the Borough of Ringwood Water System. After you have had a chance to review the report, we hope you will have a better understanding of what is involved in bringing high quality drinking water to your faucet.

The 2010 Water Quality Report provides our customers with information on the sources of their drinking water, the treatment facilities, an explanation of potential contaminants that may be found in drinking water, applicable health information, and concentrations of detected substances with a comparison to drinking water quality regulations.

The Borough of Ringwood is committed to supplying our consumers with high quality drinking water and information about the drinking water that we provide. If you would like additional information or if you have any questions concerning this report, feel free to call me at 973-475-7101. You can also call the EPA Safe Drinking Water Hotline at 1-800-426-4791 for further information.

Sincerely,

Scott Heck, Borough Manager
Director of Public Works/Water Superintendent

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Sources of Drinking Water

Both tap water and bottled water may come from groundwater (springs, wells) or surface waters (rivers, lakes, ponds, streams, reservoirs). As the water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and can pick up substances resulting from the presence of animals or from human activity.

The Borough of Ringwood presently owns and operates four groundwater wells located in the Borough. The wells include: Well 9R located at Beattie Lane, Well 2 located at Valley Road, Well 3 located at Brooksyde Avenue, and Well 8 located at Cannici Drive.

Also, the Borough purchases water from the Passaic Valley Water Commission (PVWC). This water is surface water drawn from the Wanaque Reservoir and treated at the North Jersey District Water Supply Commission (NJDWSC) Water Treatment Plant located in Wanaque. The Wanaque watershed supplies the following two reservoirs: the 29.6 billion gallon Wanaque Reservoir and the 7 billion gallon Monksville Reservoir. The Wanaque Reservoir is operated by the NJDWSC.

Approximately 30% of the total water supply to the Borough is purchased from PVWC and 70% is drawn from the Borough's wells.

The New Jersey Department of Environmental Protection (NJDEP) Bureau of Safe Drinking Water Assessment Reports and Summaries for all public water systems are now complete. Further information on the Source Water Assessment Program can be obtained by logging onto NJDEP's source water website at www.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. A summary of NJDEP susceptibility ratings for the Ringwood Water Department sources is included in Appendix A.



Water System Improvements

The Borough has been periodically undertaking improvements to the water system which are necessary to ensure efficient delivery of safe and adequate water supply.

In 2010, the Borough started construction of a new chlorination station on Margaret King Avenue. This new chlorination station will replace the existing temporary one. The construction of this project will be completed in spring of 2011.

The second project is installing new water mains and fire hydrants in the Hickory/Welch Road neighborhood. The new water mains will replace the existing undersized water mains. The design of this project is complete. Once the required approvals are received, construction can begin.

The third project is the rehabilitation of the Upper Ringwood water tank. This project includes removing the existing paint, both interior and exterior, making several structural repairs and repainting the tank.

We are continuing to upgrade our system, both security and operational, and are always investigating ways to make our systems safer, more reliable and efficient.

An opportunity for public participation concerning decisions that may affect water quality is provided during regularly scheduled Council meetings held on the third Tuesday of each month at 8:00 P.M.

Compliance with Drinking Water Standards

In order to ensure the safety of drinking water, the Environmental Protection Agency (EPA) and the NJDEP prescribe regulations which limit the amount of certain contaminants in water provided by public water systems and require water suppliers to monitor and treat for potentially harmful contaminants. Bottled water is similarly regulated by the Food and Drug Administration and must provide the same protection for public health as tap water. Our water, which is treated according to the EPA's and NJDEP's regulations, most often exceeds the water quality standards set by those agencies.

Potential Contaminants

The type of contaminants that may be found in drinking water before we treat it 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 stormwater, runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

- ◆ **Pesticides** are chemicals used to destroy insects and rodents. **Herbicides** are chemicals used to kill weeds. Both contaminants may come from a variety of sources such as agriculture, urban storm-water runoff, and residential uses.

- ◆ **Radioactive Contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

- ◆ **Organic Chemical Contaminants**, including synthetic (SOC) and volatile organic chemicals (VOC), which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff, and septic systems.

- ◆ **Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

All drinking water, including bottled water, may reasonably be expected to contain naturally occurring minerals and traces of 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 Safe Drinking Water Hotline (1-800-426-4791)**.

BOROUGH OF RINGWOOD

Terms and Abbreviations

N/A = Not Applicable

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.

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

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

ND = Not Detected

NS = No Standard

pCi/l = Picocuries per Liter

ppm = parts per million; (comparable to one minute in two years or 1 cent in \$10,000.00)

ppb = parts per billion; (comparable to one minute in two thousand years or 1 cent in \$10,000,000.00)

NRTP - Not Required this Period

MF/L = million fibers per liter (longer than 10 micrometers)

Water Quality Data - Concentrations of Contaminants That Were Detected in 2010 Ringwood (PWSID # 1611002)

Vulnerable Populations Statement: 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).

CONTAMINANTS - PRIMARY STANDARDS	VIOLATION (Y/N)	MCL	MCLG	WELL 2 VALLEY RD	WELLS 3 & 8 BROOKSIDE AVE	WELL 9R BEATTIE LA	NJDWSC SUPPLY	LIKELY SOURCES OF CONTAMINATION	ASSORTED HEALTH EFFECTS
Microbiological Contaminants (No more than 5% positive samples per month may test positive for total coliform. No sample can test positive for fecal coliform or E. coli.)									
Total coliform bacteria	N	1 pos/mo	0	Neg.	Neg.	Neg.	Neg.	Naturally present in the environment, leaking septic systems or other runoff.	Coliforms are bacteria that are used as an indicator that other, potentially-harmful, bacteria may be present.
Radioactive Contaminants (Units given in parenthesis)									
Gross Alpha (pCi/l) - 2006 Data	N	15	0	0.9	0.03	3	Not Detected (2009)	Erosion of natural deposits	Some people who drink water containing alpha or beta emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Radium (226pCi/L) - 2006 Data	N	5	0	2	2	2	Not required	Erosion of natural deposits	
Radium (228pCi/L) - 2006 Data	N	5	0	0.6	0.3	0.1	Not Detected (2009)	Erosion of natural deposits	
Inorganic Chemicals (Units given in parenthesis. Test results are from year 2003 in accordance with NJDEP requirements.)									
Asbestos (MFL)	N	7	7	none required since 2004 = <0.009			Not required	Decay of asbestos cement water mains and erosion of natural deposits.	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Arsenic (ppb)	N	5	5	<3 (2008)	<3 (2008)	<3 (2008)	0.28	Erosion of natural deposits, runoff from orchards runoff from glass and electronic production wastes.	Skin damage or problems with circulatory systems; possible increased risk of cancer.
Lead (ppb)	N	15	0	<2 (2009)	<2 (2009)	<2 (2009)	NA	Erosion of natural deposits, discharge from metal refineries & drilling wastes	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and Blue Baby Syndrome.
Barium (ppm)	N	2	2	<0.2 (2009)	<0.2 (2009)	<0.2 (2009)	0.0087	Naturally present in the environment	Erosion of Natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Aluminum (ppb)	N	200	200	153 (2009)	<15 (2009)	<15 (2009)	17	Naturally occurring element	Aluminum is a secondary standard and is not considered a health risk
Nitrate (ppm)	N	10	10	2	2	0.7	0.21	Runoff from fertilizer and natural sources	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and Blue Baby Syndrome.
Sodium (ppm)	NA	50	50	17	56	40	22	Road salt from deicing operations and/or treatment techniques.	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 RUL might be of concern to individuals on sodium restricted diets.
Sulfate (RMCL 250 mg/l)	NA	250	250	10 (2009)	20 (2009)	10 (2009)	8.1	Naturally Occuring substance in all drinking water	Sulfate is a secondary standard and is not considered a health risk
Volatile Organic Compounds (Units given in parenthesis)									
Chloride (ppm)	NA	250	250	51 (2009)	102	46 (2009)	44	Naturally and man made component in many salts	Chloride is a secondary standard and is not considered a health risk
Haloacetic Acids (ppb)	N	60	60	Distribution System Yearly Average = 8 ug/L			23	By-product of drinking water chlorination	Some people who drink water containing HAAs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Total Trihalomethanes (ppb)	N	80	80	Distribution System Yearly Average = 24 ug/L			48	By-product of drinking water chlorination	Some people who drink water containing THM's in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Turbidity Expressed as nephelometric turbidity units (NTU).									
Turbidity (NTU)-Highest Result	N	TT=1.0	N/A	N/A	N/A	N/A	0.52	Soil Runoff	Turbidity has no health effects.

SEE APPENDIX A FOR SOURCE WATER ASSESSMENT SUMMARY

ND=Non-Detectable

Ringwood Water Department- PWSID # 1611002

Ringwood Water Department is a public community water system consisting of 4 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 1 purchased, ground water source(s) and 1 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, igneous and metamorphic rocks. This system purchases water from the following water system(s) (if applicable): PVWC, Wanaque Water Department.

Susceptibility Ratings for Ringwood 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		
	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		3	1	2	1	1			4	2		2			4		3	1	1	3				
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.



Water Quality Data Table

The table lists all the drinking water contaminants that we detected during the 2010 calendar year. The presence of these contaminants in the water does not indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing performed on samples of water taken from January 1 through December 31, 2010. The State allows the Borough to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.



Health/Education Information:

Iron: 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.

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.



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

Children may receive a slightly higher amount of 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 insufficient 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.

Nitrate: Nitrate in drinking water at 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.

Lead: If present, elevated levels of lead can cause 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. Ringwood water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When the 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. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.



Water Supply Facilities

Water pumped from the Borough's wells is treated with chemicals for the purposes of disinfection and corrosion control before it is delivered into the system. Treatment for Wells 2 and 9R is provided at individual well stations located near the respective well. Water from Wells 3 and 8 is combined and treated at the Brooksyde Booster Station.

The average daily demand of the system is approximately 0.860 million gallons per day, the maximum daily flow during 2010 was 1.450 million gallons on July 5. The Ringwood Water System includes five water storage tanks which are located throughout the distribution system and have a combined capacity of over 2 million gallons. The capacity of the wells range from 60 gallons per minute to 510 gallons per minute.