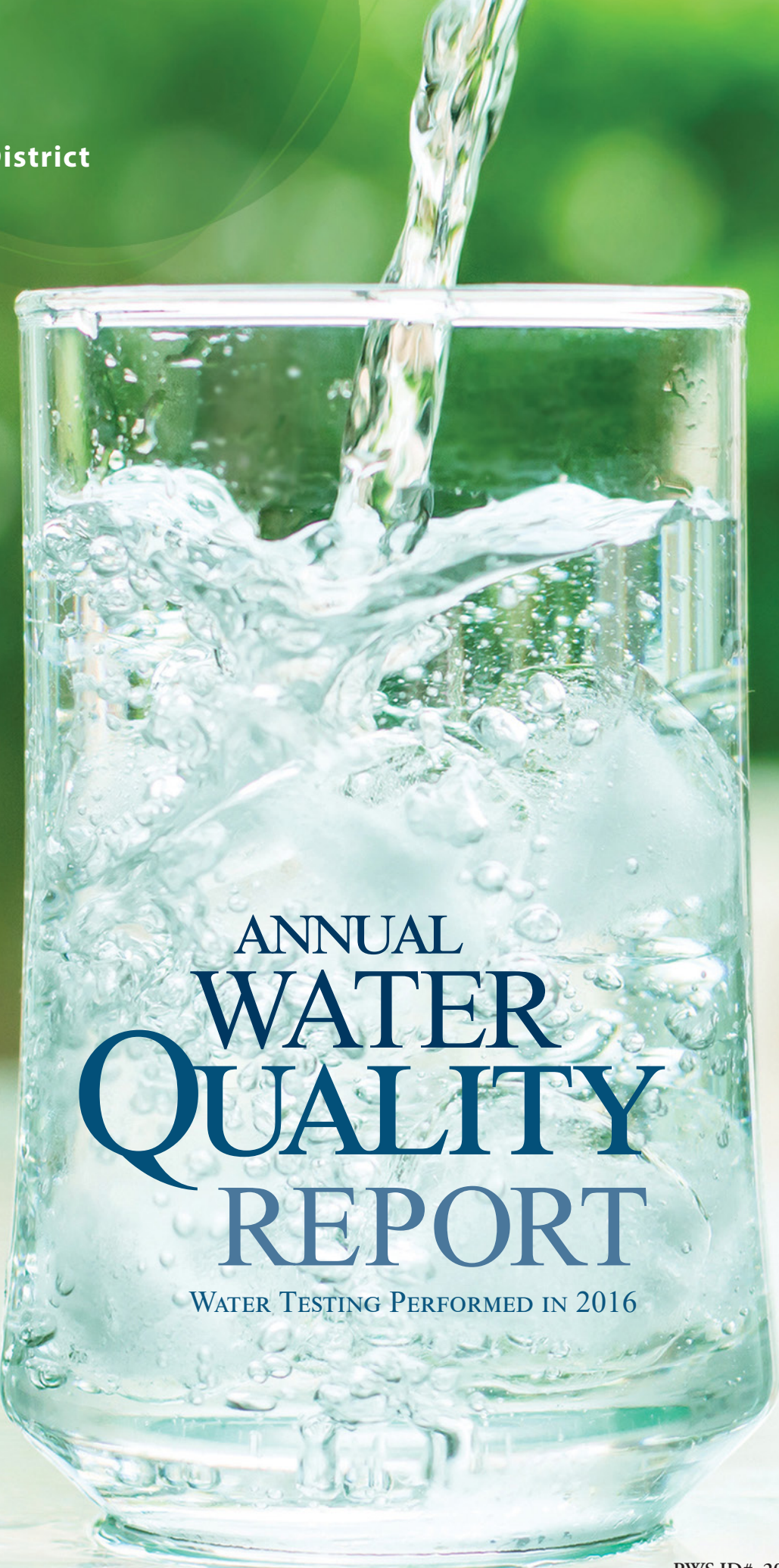


*Presented By*  
**Rye Water District**



# ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

## There When You Need Us

The Rye Water District once again welcomes the opportunity to present our annual water quality report, covering the period between January 1 and December 31, 2016. Our staff works hard to deliver high-quality drinking water and fire protection without interruptions. Although the challenges ahead are many, we believe customer education, system maintenance, upgrades, and personnel training is the payoff. With this in motion, we'll be reliable for the continuation of high-quality tap water delivery to our customers.

## Where Does Rye's Water Come From?

Rye Water District has two main sources of water, Rye production wells and water purchased from Portsmouth for customers on Wentworth Road, a section of Frontier Street, and Elizabeth Lane (off Pioneer Road).

Our primary source is the Garland well, a gravel-pack well, developed in the mid-seventies, which yields 400-470 gallons per minute (GPM). Our secondary sources are two deep-driven high-yielding bedrock wells. First is the Bailey Brook well developed in the early eighties, which yields 300-325 GPM. Second is the Cedar Run well, our most recent source, developed and brought online in the mid-nineties. Cedar Run well yields 325-340 GPM. Combined, these three wells supplied over 133.5 millions gallons in 2016. The water you receive at your home is a blend of all three wells.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or at <http://water.epa.gov/drink/hotline>.

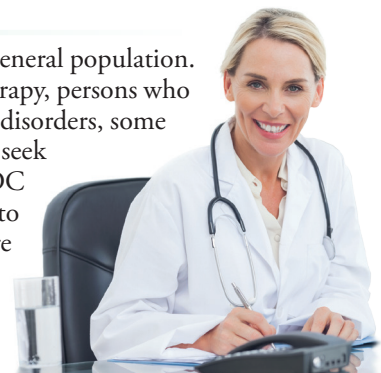
## Source Water Assessment Summary

NHDES prepared drinking water source assessment reports for all public water system between 2000 and 2003 in the effort to assess the vulnerability of each of the state public water supply sources. Included in the report is a map of each source water protection area, a list of potential and known contamination sources, and a summary of available protection options. The results of the assessment, prepared on May 2, 2002, and November 12, 2004, are noted below.

- **Garland Well:** three susceptibility factors were rated high, four were rated medium, and five were rated low.
- **Bailey Brook Well:** one susceptibility factor was rated high, four were rated medium, and seven were rated low.
- **Cedar Run Well:** one susceptibility factor was rated high, four were rated medium, and seven were rated low.

Note: This information is over 10 years old and includes information that was current at the time the report was completed. Therefore, some of the ratings might be different if updated to reflect current information. At the present time, DES has no plans to update this data.

The complete Assessment is available for review at the RWD office, 60 Sagamore Rd., Rye, NH. For more information, call the RWD office at 603-436-2596, or visit the DES Drinking Water Source Assessment website at [www.des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm](http://www.des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm) and click on Part 1 Viewing an Assessment Table by Town, then search for Rye.





## Substances That Could Be in Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 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 by-products of industrial processes and petroleum production and may also come from gas stations, urban storm-water runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Community Participation

You are always welcome and invited to attend the District's monthly meetings and provide your inputs about your drinking water. Rye Water District Commissioners meet the first Wednesday of each month, beginning at 9 a.m., at the Rye Water District office, located at 60 Sagamore Rd., Rye, NH 03870. Again, please feel free to email your questions or comments to the Water District Commissioner at: [commissioners.ryewater@comcast.net](mailto:commissioners.ryewater@comcast.net).

## Total Coliform Assessment

Coliforms are bacteria that are naturally present in the environment and are used primarily as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms, indicating the need to look for potential problems in water distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

In December 2015, our routine sampling indicated coliform maybe present, which triggered a Level 1 assessment. This assessment was conducted in December 2015 and January 2016. The assessment required each water source be sampled with additional distribution system sampling. Each water source was sampled with no detections of bacteria, and the additional distribution samples tested clear of bacteria. The conclusion of the assessment found that there was a false positive due to a sampling error/technique. The NHDES determined no additional action was required.

Based on the results of the Level 1 assessment, no Level 2 assessments were required to be completed for our water system.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water and/or system operations, please call Mr. Ken Aspen, District Superintendent, at (603) 436-2596, or contact the Rye Water District Commissioners via email at: [commissioners.ryewater@comcast.net](mailto:commissioners.ryewater@comcast.net).

## Conserve Water by Giving Your Irrigation System a Check-up

As we move into summer, it's a good time to have your irrigation system fine-tuned. A properly maintained irrigation system can help save money and water, but also benefits the water system during the summer's demand. Water resources can be limited due to increased customer use and environmental demands, such as vegetation growth and evaporation; during a drought, supply can be further strained. Homes with timer-controlled irrigation systems use over 50 percent more water outdoors than homes without irrigation systems. If the controller isn't programmed or set properly, the system can waste as much as 2,200 gallons per week. Combine that with other improperly maintained systems, such as sprinkler heads pointed in the wrong direction or just letting water running down the driveway, as other improper uses. Properly maintained irrigation systems allow for greater water efficiency at a time of peak demand. Please follow the Rye Water District's suggested watering guidelines to help prevent outdoor water bans. Please water in the early morning hours BEFORE 8:00 a.m. and in the evening AFTER 6:00 p.m. Most automatically controlled irrigation systems have an override switch that can be used if a rainy forecast is predicted.

## Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, 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. 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 [www.epa.gov/lead](http://www.epa.gov/lead).

## Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should pursue radon removal for your home if the level of radon in your air is 4 pCi/L or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call U.S. EPA's Radon Hotline at (800) SOS-RADON.

WELL	YEAR SAMPLED	RESULTS (pCi/L)
Bailey Brook Well	2001	450
Cedar Run Well	2003	710
Garland Well	2001	1,300

Currently, there are no regulatory requirements to sample for radon. However, the Rye Water District in past years has sampled its three wells for radon and is providing these results again to the District customers for informational purposes.

## Additional Monitoring

The Rye Water District is continuing to sample for PFCs and 1,4-dioxane, with the initial sampling started in 2016. The RWD intends to sample twice per year for these compounds. Results will be reported to customers when the data are available.

The following table presents all sampling results to date.

SAMPLING RESULTS FOR PERFLUORINATED COMPOUNDS AND 1,4-DIOXANE						
		Perfluorinated Compounds			1,4-Dioxane	
		PFOS	PFOA	PFHXS		
<b>Garland Well</b>	Apr 2016	6 ppt	6 ppt	ND	Apr 16	ND
	Jan 2017	6.9/7.8 ppt	7.1/7.8 ppt	ND	Feb 17	ND
<b>Bailey Well</b>	Apr 2016	ND	ND	ND	Apr 16	ND
	Jan 2017	ND	2-5 ppt	ND	Feb 17	ND
<b>Cedar Run Well</b>	Apr 2016	ND	2 ppt	ND	Apr 16	ND
	Jan 2017	ND	3 ppt	ND	Feb 17	ND



### What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing “7 PC” (code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

### How much emergency water should I keep?

Typically, 1 gallon per person per day is recommended. For a family of four, that would be 12 gallons for 3 days. Humans can survive without food for 1 month, but can survive only 1 week without water.

### How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria before it was filled with tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

### How long does it take a water supplier to produce one glass of drinking water?

It could take up to 45 minutes to produce a single glass of drinking water.

## Sampling Results

The RWD water system is monitored on a routine basis for many different kinds of contaminants on a strict sampling schedule set by the NHDES Master Sampling Schedule (MSS). In the last quarter of 2016, the RWD Public Water System, EPA ID #2041010, sampled to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The information below represents only those substances that were detected.

The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2016	10	0	0.0011	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2016	2	2	0.0129	0.0126–0.0129	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium (pCi/L)	2014	5	0	0.8	ND–0.8	No	Erosion of natural deposits
Fluoride <sup>1</sup> (ppm)	2016	4	4	0.24	NA	No	Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	2016	10	10	3.2	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.591	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	0	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2016	250	NA	90	37–90	No	Runoff/leaching from natural deposits
Copper (ppm)	2016	1.0	NA	0.0082	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits
Iron (ppb)	2016	300	NA	477	NA	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2016	50	NA	68.5	NA	No	Leaching from natural deposits
Sulfate (ppm)	2016	250	NA	28	16–28	No	Runoff/leaching from natural deposits; Industrial wastes

### UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2016	80.8	44.5–80.8	Naturally occurring

<sup>1</sup>The District does not add fluoride to the water. If you have small children, you may want to discuss this topic with your pediatrician

## Definitions

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

**Level 1 Assessment:** A Level 1 assessment is a study of the water system to identify potential problems and determine why (if possible) total coliform bacteria have been found in our water system.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine why (if possible) an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**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.

**NA:** Not applicable.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).