

ANNUAL WATER QUALITY REPORT

Reporting Year 2021

Presented By
Rye Water District

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

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 Road, Rye, NH 03870. Again, please

feel free to email your questions or comments to Water District Commissioners at commissioners.ryewater@comcast.net. Also, please attend our annual meeting for voting on the Water District's annual budget, warrant articles, and proposed projects. This meeting is normally held the last Saturday of March. See our Web site (www.ryewaterdistrict.com) for details.

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-70s, which yields 400-470 gallons per minute (GPM). Our secondary sources are two deep-driven high-yielding bedrock wells. The first of these is the Bailey Brook well, developed in the early 80s, which yields 300-325 GPM. The second is the Cedar Run well, our most recent source, developed and brought on line in 2004. The Cedar Run well yields 325-340 GPM and currently serves as an emergency back-up well. Combined, these three wells supplied over 138 millions gallons in 2021. The water you receive at your home is a blend of all three wells.

“When the well is dry, we know the worth of water.”

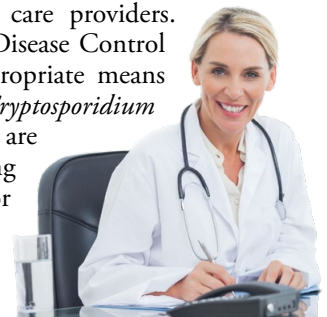
—Benjamin Franklin

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 we 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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 <http://water.epa.gov/drink/hotline>.



QUESTIONS? For more information about this report, or for any questions relating to your drinking water and/or system operations, please call Mr. Arik Jones, District Superintendent, at (603) 436-2596 or contact the Rye Water District Commissioners via email at commissioners.ryewater@comcast.net. Also, many reports and information can be viewed on our Web site at www.ryewaterdistrict.com.

Substances That Could Be in 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 that 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 stormwater 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 stormwater 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 stormwater 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.

Level 1 Assessment Update

Coliforms are bacteria that are naturally present in the environment and are used 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 treatment or 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.

During the past year, we were required to conduct one Level 1 assessment, which completed. We were required to take no corrective actions.

Source Water Assessment Summary

NH Department of Environmental Services (NHDES) prepared drinking water source assessment reports for all state public water systems 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 rate 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 this report was completed. Therefore, some of 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 Web site at <http://des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm>, and then click on "Part 1. Viewing an Assessment Table by Town," and then search for Rye.

Water Stress

Water stress occurs when the demand for water exceeds the amount available during a certain period or when poor water quality restricts its use. Water stress causes deterioration of freshwater resources in terms of quantity (aquifer overexploitation, dry rivers, etc.) and quality (eutrophication, organic matter pollution, saline intrusion, etc.).

According to the World Resources Institute (www.wri.org), the Middle East and North Africa remain the most water-stressed regions on Earth. However, several states in the western half of the U.S. are similarly experiencing extremely high levels of water stress from overuse. It is clear that even in countries with low overall water stress, individual communities may still be experiencing extremely stressed conditions. For example, South Africa and the United States rank #48 and #71 on WRI's list, respectively, yet the Western Cape (the state home to Cape Town) and New Mexico experience extremely high stress levels.

There are undeniably worrying trends in water quality. But by taking action now and investing in better management, we can solve water issues before it's too late.



Treatment Train Description

The water you receive at your tap is untreated groundwater. However, we adjust the pH of the water from the Garland well as part of our corrosion control program. In addition, we utilize chlorination during our semi-annual flushing to aid in disinfection of the distribution system.

Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit <https://bit.ly/31eRyXy>.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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 (if possible) why total coliform bacteria have been found in our water system.

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. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

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).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show only those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less often 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
Barium ¹ (ppm)	2021	2	2	0.0314	0.0114–0.0314	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium ² (pCi/L)	2020	5	0	0.4	ND–3.3	No	Erosion of natural deposits
Fluoride ¹ (ppm)	2021	4	4	ND	ND–0.25	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate ² (ppm)	2021	10	10	3.1	ND–3.3	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perfluorohexanesulfonic Acid [PFHxS] (ppt)	2021	18	NA	2.26	ND–2.26	No	Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/leachate from landfills and septic systems
Perfluorooctanesulfonate Acid [PFOS] (ppt)	2021	15	0	7.97	ND–7.97	No	Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/leachate from landfills and septic systems
Perfluorooctanoic Acid [PFOA] (ppt)	2021	12	0	8.64	ND–8.64	No	Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/leachate from landfills and septic systems
Perfluorononanoic Acid [PFNA] (ppt)	2021	11	0	ND	N/A -	No	Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/leachate from landfills and septic systems

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 %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	1.17	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2020	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 ¹ (ppm)	2021	250	NA	63	41–85	No	Runoff/leaching from natural deposits
Iron ¹ (ppb)	2021	300	NA	4,280	ND–4,280	No	Leaching from natural deposits; Industrial wastes
Manganese ¹ (ppb)	2021	50	NA	264.6	ND–264.6	No	Leaching from natural deposits
Sulfate ¹ (ppm)	2021	250	NA	78	16–78	No	Runoff/leaching from natural deposits; Industrial wastes
Zinc ¹ (ppm)	2021	5	NA	0.3	ND–0.3	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium ¹ (ppm)	2021	105	45.9–105	Naturally occurring

¹ Samples taken from the Cedar Run Well

² Samples taken from the Garland Well