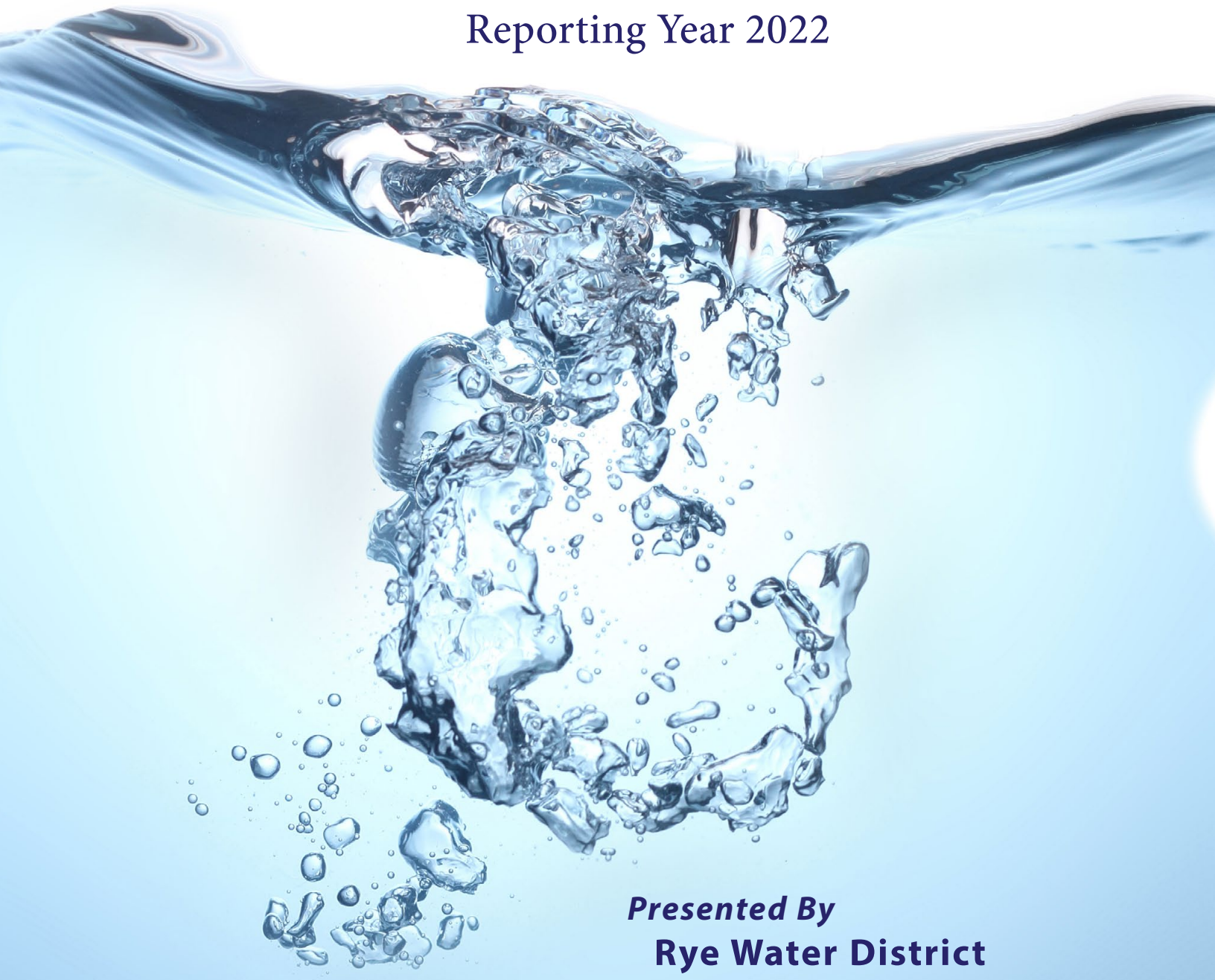
# ANNUAL WATER QUALITY REPORT

Reporting Year 2022



*Presented By*

**Rye Water District**

PWS ID#: 2041010

## Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

## Source Water Assessment Summary

New Hampshire Department of Environmental Services (NHDES) prepared drinking water source assessment reports for all public water system between 2000 and 2003 in an 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.

This assessment 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 Road, Rye. For more information, call the RWD office at (603) 436-2596 or visit the DES Drinking Water Source Assessment website at https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/rye.pdf. Click on Part 1. Viewing an Assessment Table by Town, and then search for Rye.

## Level 1 Assessment Update

Coliforms are bacteria that are naturally present in the environment and 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 an assessment to identify and correct any problems.

During the past year, we were required to conduct one Level 1 assessment for our water system. One Level 1 assessment was completed. We were not required to take any corrective actions.

## Where Does Rye's Water Come From?

Rye Water District (RWD) 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-packed well developed in the mid-70s, which yields 400 to 470 gallons per minute (gpm). Our secondary sources are two deep-driven, high-yield bedrock wells. The Bailey Brook well, developed in the early 80s, yields 300 to 325 gpm. The Cedar Run well is our most recent source, developed and brought online in 2004. It yields 325 to 340 gpm and presently is serving as an emergency backup well. Combined, these three wells supplied over 170 million gallons in 2021 and 2022. 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 online at: http://water.epa.gov/drink/hotline.

## Questions?

For more information about this report, or for any questions relating to your drinking water or system operations, please call Mr. Arik Jones, District Superintendent, at (603) 436-2596, or contact the Rye Water District Commissioners at commissioners.ryewater@comcast.net. Many reports and additional information can be viewed on our website, 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, 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 can pick up 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 per- and polyfluoroalkyl substances, 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.

## 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 two 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.

## What Are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/ wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit http://bit.ly/3Z5AMm8.

## Level 2 Assessment Update

*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct an assessment to identify and correct any problems.

During the past year, we were required to complete one Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take one corrective action, and we completed the corrective action with mandated chlorination.

## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show 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 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) | 2022 | 5 | 0 | 1[1] | ND-1[1] | No | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |
| **Barium** (ppm) | 2022 | 2 | 2 | 0.0123[1] | 0.0121–0.0489[1] | No | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| **Combined Radium** (pCi/L) | 2020 | 5 | 0 | 0.4[2] | ND–3.3[2] | No | Erosion of natural deposits |
| **Fluoride** (ppm) | 2022 | 4 | 4 | 0.25[1] | ND–0.25[1] | No | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| **Nitrate** (ppm) | 2022 | 10 | 10 | 3.1[2] | ND–3.3[2] | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| **Perfluorohexanesulfonic Acid [PFHxS]**[2] (ppt) | 11/28/2022 | 18 | NA | 2.09[2] | ND–3.04[2] | No | Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/ leachate from landfills and septic systems |
| **Perfluorooctanesulfonate Acid [PFOS]** (ppt) | 11/28/2022 | 15 | 0 | 8.47[2] | ND–8.47[2] | No | Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/ leachate from landfills and septic systems |
| **Perfluorooctanoic Acid [PFOA]** (ppt) | 11/28/2022 | 12 | 0 | 8.97[2] | ND- 8.97[2] | No | Discharge from industrial processes, wastewater treatment, residuals from firefighting foam, runoff/ leachate from landfills and septic systems |
| **Perfluorononanoic Acid [PFNA]** (ppt) | 11/28/2022 | 11 | 0 | ND[3] | NA | 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 | ND | 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) | 2022 | 250 | NA | 37[1] | 37–93[1] | No | Runoff/leaching from natural deposits |
| **Iron** (ppb) | 2022 | 300 | NA | 670[1] | ND–4,280[1] | No | Leaching from natural deposits; industrial wastes |
| **Manganese** (ppb) | 2022 | 50 | NA | 67.7[1] | ND–264.6[1] | No | Leaching from natural deposits |
| **Sodium** (ppm) | 2022 | 100-250 | NA | 98.9[1] | 45.9–105[1] | No | Naturally occurring |
| **Sulfate** (ppm) | 2022 | 250 | NA | 46[1] | 16–78[1] | No | Runoff/leaching from natural deposits; industrial wastes |
| **Zinc** (ppm) | 2022 | 5 | NA | ND[4] | ND–0.3[4] | No | Runoff/leaching from natural deposits; industrial wastes |

[1] Sample taken from Bailey Brook Well.
[2] Sample taken from Garland Well.
[3] Sample taken from Garland, Bailey Brook, and Cedar Run Wells.
[4] Samples taken from Bailey Brook and Garland Wells.

## About Our Violation

We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

## Radon

Our system monitored for radon and found levels of 439 picocuries per liter (pCi/L). 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 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. 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 the U.S. EPA Radon Hotline at (800) SOS-RADON.

## Community Participation

You are always welcome to attend the district's monthly meetings and provide input about your drinking water. Rye Water District Commissioners meet the first Wednesday of each month at 9:00 a.m. at the Rye Water District office, 60 Sagamore Road. Please attend our annual meeting to vote on the Water District's annual budget, warrant articles, and proposed projects. This meeting is normally held the last Saturday in March. See our website, www.ryewaterdistrict.com, for details.

## 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.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why 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.

**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.