RANDOLPH CENTER WATER SYSTEM
Water System Identification - WSID 5177
Consumer Confidence Report – 2021

The Randolph Center Water System (RCWS) is jointly operated by the Randolph Fire District #1 (FD#1) and Vermont Technical College (VTC). FD#1 has a pipeline distribution system, which includes fire hydrants, from its supply source and pump house north of Furnace Road extending north along Route 66 from Furnace Road and south along East Bethel Road, and on Water Street, including services reaching portions of Ski Tow Road. RFD#1 has approximately 55 customer services.

VTC has a pipeline distribution system serving its campus buildings and includes a drilled well along Penny Brook, south of the Langevin Farm. VTC and FD#1 utilize VTC's water tower for storage and pressure.

This report is a summary of the quality of the water that RCWS provided in 2020. Included are the details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

The person who can answer questions about this report is: Patricia M. Beavers, The Fire District's Contract Water System Operator. Please write: P^2 Environmental 19 Johnson Circle, Tunbridge, Vermont 05077 or Email patricia@p2water.com, or for college campus related questions, contact Ted Manazir, Director of Facilities Vermont Technical College at 802-728-1275 or Email tmanazir@vtc.edu.

Water Source Information*:* Your water comes from:

Source Name	Source Water Type
LANGEVIN FARM WELL/PENNY BROOK	Groundwater
SPRING	Groundwater

The State of Vermont Water Supply Rule requires Public Community Water Systems to develop a Source Protection Plan. This plan delineates a source protection area for our system and identifies potential and actual sources of contamination. Our Plan was approved and the next update is December 2021. Please let us know if you wish to review the Plan.

Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include surface water (streams, lakes) and ground water (wells, springs). As water travels over the land's surface or through the ground, it dissolves naturally-occurring minerals. It also picks up substances resulting from the presence of animals and human activity. Some "contaminants" may be harmful. Others, such as iron and sulfur, are not harmful. Public water systems treat water to remove contaminants, if any are present.

In order to ensure that your water is safe to drink, we test it regularly according to regulations established by the U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants:

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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
Pesticides and herbicides, may come from a variety of sources such as storm water run-off, agriculture, and residential users.
Radioactive contaminants, which can be naturally occurring or the result of mining activity

Organic contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban storm water run-off, and septic systems.

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the past year. It also includes the date and results of any contaminants that we detected within the past five years if tested less than once a year. The presence of these contaminants in the water does not necessarily show that the water poses a health risk.

Terms and abbreviations - In this table you may find terms you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Maximum Contamination Level Goal (MCLG): The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to human health. MCLG's allow for a margin of safety.
Maximum Contamination Level (MCL): The "Maximum Allowed" MCL is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Residual Disinfectant Level Goal (MRDLG): 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 disinfectants in controlling microbial contaminants.
Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. Addition a disinfectant may help control microbial contaminants.
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
90th Percentile: Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level).
Treatment Technique (TT): A process aimed to reduce the level of a contaminant in drinking water.
Parts per million (ppm) or Milligrams per liter (mg/l): (one penny in ten thousand dollars)
Parts per billion (ppb) or Micrograms per liter (µg/l): (one penny in ten million dollars)
Picocuries per liter (pCi/L): a measure of radioactivity in water
Nephelometric Turbidity Unit (NTU): NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Locational Running Annual Average (LRAA): The average of sample analytical results for samples taken at a particular monitoring location during four consecutive calendar quarters.
Running Annual Average (RAA): The average of 4 consecutive quarters (when on quarterly monitoring); values in table represent the highest RAA for the year.

Detected Contaminants RANDOLPH CENTER WATER SYSTEM

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.177	0.010 - 0.200	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Nitrate	03/09/2020	2	1.6 - 2	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Combined Radium (-226 & -228)	11/02/2020	1.6	1.6 - 1.6	pCi/L	5	0	Erosion of natural deposits
Gross Alpha Particle Activity*	05/20/2020	3.52	3.52 - 3.52	pCi/L	NA	0	Erosion of natural deposits
Radium-226	11/02/2020	0.479	0.479 - 0.479	pCi/L	5	0	Erosion of natural deposits
Radium-228	11/02/2020	1.12	1.12 - 1.12	pCi/L	5	0	Erosion of natural deposits

*Gross Alpha particle activity results include Uranium activity. However, the EPA has set a maximum contaminant level (MCL) for "adjusted" Gross Alpha particle activity (including radium-226 but excluding Uranium) at 15 pCi/L. To determine compliance with the "adjusted" Gross Alpha MCL, a separate Uranium result is required for the adjustment calculation, and it must be converted from mass (ug/L) to activity (pCi/L). The estimated Uranium activity is then subtracted from the Gross Alpha particle activity lab result to yield the "adjusted" Gross Alpha result in pCi/L.

Lead and Copper	Collection Year	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	2019	1.7	0 - 5.9	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	2019	0.053	0 - 0.081	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

*The lead and copper AL (Action Level) exceedance is based on the 90th percentile concentration, not the highest detected result.

Lead/Copper Samples are collected every three years at ten sites from both sources.

Uncorrected Significant Deficiencies

The system is required to inform the public of any significant deficiencies identified during a sanitary survey conducted by the Drinking Water and Groundwater Protection Division that have not yet been corrected. For more information, please refer to the schedule for compliance in the system's Operating Permit.

Date Identified	Significant Deficiencies	Facility
November 20, 2020	Missing Permit to Operate	RCWS #5177

The Randolph Center Water System (RCWS), that is, the system designated by the state as the combination of the Randolph Fire District #1 and Vermont Technical College water providers, filed its first permit to operate January 2018. As this permit was not acted upon by the state by the time of the next sanitary survey in October 2020, RCWS was directed by the state Drinking Water Division to submit a new Permit to Operate application, which we did on February 10, 2021, and the RCWS was subsequently issued a Permit to Operate by the Vermont Drinking Water Division on May 19, 2021. The issued Permit to Operate requires resolution of one (1) sanitary deficiency, as follows: "One of before September 1, 2021, the Permittees shall either identify the first connection served by TP001 (the Randolph Fire District #1 spring source and pump house) and begin monitoring daily disinfection residual concentrations at that location, or submit

a plan and schedule to install a dedicated sampling hydrant prior to the first service connect and after disinfection CT (contact time) to the (drinking water) Division for review and approval."

The RCWS is currently working on options to address this stated deficiency.

Health Information Regarding Drinking Water

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 microbiological contaminants are available from EPA's Safe Drinking Water Hotline (1-800-426-4791).

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some 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 Safe Drinking Water Hotline.

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. RANDOLPH CENTER WATER SYSTEM is 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 drinking 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 http://www.epa.gov/safewater/lead.

Per- and Polyfluoroalkyl Substances (PFAS) are contaminants you may see reported in your Consumer Confidence Report (CCR) for the first time.
What are PFAS?

PFAS are a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide since at least the 1950s. These chemicals are used to make household and commercial products that resist heat and chemical reactions and repel oil, stains, grease, and water. Some common products that may contain PFAS include non-stick cookware, water-resistant clothing and materials, cleaning products, cosmetics, food packaging materials, and some personal care products. Due to their resilient chemical nature, they don't readily degrade once they are released into the environment. In addition, the common use of these chemicals in industry and consumer products has led to their widespread impact on the environment. The impact of these chemicals on your drinking water continues to be studied.

Why are PFAS being tested in my drinking water?
In May 2019, Act 21 (S.49), an act relating to the regulation of per- and polyfluoroalkyl substances (PFAS) in drinking and surface waters, was signed by Governor Scott. This Act provides a comprehensive framework to identify PFAS contamination and to issue new rules to regulate PFAS levels in drinking water.

What if PFAS have been detected in my drinking water?
Act 21 set an interim standard for the detected concentration of five PFAS in drinking water, or the combined concentration of any of the 5 PFAS, which should not exceed **20 parts per trillion (ppt).** The interim standard is based on the Health Advisory established by the Vermont Department of Health. The five PFAS are:

(PFNA): Perfluorononanoic Acid
(PFOA): Perfluorooctanoic Acid
(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid
(PFHxS): Perfluorohexane Sulfonic Acid

If your water has been tested and the **sum any of the five PFAS listed above is confirmed to exceed 20 ppt**, a Do Not Drink notice will be issued informing you not to use your water for drinking or cooking, brushing teeth, making ice cubes, making baby formula, washing fruits and vegetables or any other consumptive use. You will be advised to use another source of water for consumption which may include bottled water.
An additional 13 PFAS were required to be tested for, per Act 21. These additional 13 PFAS, listed below, currently do not have an established health-based standard and are not counted toward the combined standard of 20 ppt:

(11Cl-PF3OUdS): 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic Acid
(9Cl-PF3ONS): 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid
(DONA): 4,8-Dioxa-3H-perfluorononanoic Acid
(HFPO-DA): Hexafluoropropylene Oxide Dimer Acid
(NEtFOSAA): N-ethyl perfluorooctanesulfonamidoacetic Acid
(NMeFOSAA): N-methyl perfluorooctanesulfonamidoacetic Acid
(PFBS): Perfluorobutane Sulfonic Acid
(PFDA): Perfluorodecanoic Acid
(PFDoA): Perfluorododecanoic Acid
(PFHxA): Perfluorohexanoic Acid
(PFTA): Perfluorotetradecanoic Acid
(PFTrDA): Perfluorotridecanoic Acid
(PFUnA): Perfluoroundecanoic Acid

Where can I learn more about PFAS in drinking water?
For information about the health effects of PFAS, please visit www.healthvermont.gov/water/pfas or call the Vermont Department of Health at 1-800-439-8550. If you have specific health concerns, contact your health care provider.

PFAS Samples Collected in 2020 were Non-Detect. No PFAS was found in your drinking water in 2020.
PFAS Sample results are following:

Spring Sample at 66 East Bethel Road

PARAMETER	Result	Units	Method	Analysis Date
PFAS Package				
Perfluorobutanesulfonic acid PFBS	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorohexanoic acid PFHxA	< 2.00	ng/L	EPA 537.1	11/14/20
HFPO-DA	< 4.00	ng/L	EPA 537.1	11/14/20
Perfluoroheptanoic acid PFHpA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorohexanesulfonic acid PFHxS	< 2.00	ng/L	EPA 537.1	11/14/20
ADONA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorooctanoic acid PFOA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorononanoic acid PFNA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorooctanesulfonic acid PFOS	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorodecanoic acid PFDA	< 2.00	ng/L	EPA 537.1	11/14/20
9Cl-PF3ONS	< 2.00	ng/L	EPA 537.1	11/14/20
NMeFOSAA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluoroundecanoic acid PFUnA	< 2.00	ng/L	EPA 537.1	11/14/20
NEtFOSAA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorododecanoic acid PFDoA	< 2.00	ng/L	EPA 537.1	11/14/20
11Cl-PF3OUdS	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorotridecanoic acid PFTrDA	< 2.00	ng/L	EPA 537.1	11/14/20
Perfluorotetradecanoic acid PFTA	< 2.00	ng/L	EPA 537.1	11/14/20

VTC Site – Keenan

PFAS Package				
Perfluorobutanesulfonic acid PFBS	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorohexanoic acid PFHxA	< 2.00	ng/L	EPA 537.1	12/28/20
HFPO-DA	< 4.00	ng/L	EPA 537.1	12/28/20
Perfluoroheptanoic acid PFHpA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorohexanesulfonic acid PFHxS	< 2.00	ng/L	EPA 537.1	12/28/20
ADONA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorooctanoic acid PFOA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorononanoic acid PFNA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorooctanesulfonic acid PFOS	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorodecanoic acid PFDA	< 2.00	ng/L	EPA 537.1	12/28/20
9Cl-PF3ONS	< 2.00	ng/L	EPA 537.1	12/28/20
NMeFOSAA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluoroundecanoic acid PFUnA	< 2.00	ng/L	EPA 537.1	12/28/20
NEtFOSAA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorododecanoic acid PFDoA	< 2.00	ng/L	EPA 537.1	12/28/20
11Cl-PF3OUdS	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorotridecanoic acid PFTrDA	< 2.00	ng/L	EPA 537.1	12/28/20
Perfluorotetradecanoic acid PFTA	< 2.00	ng/L	EPA 537.1	12/28/20