2019 drinking water quality report

RIVERHEAD WATER DISTRICT
PUBLIC WATER SUPPLY IDENTIFICATION NO. 5103705

Town Board Members
Supervisor Yvette Aguiar
Councilwoman Jodi Giglio
Councilman Tim Hubbard
Councilwoman Catherine Kent
Councilman Frank Beyrodt

Superintendent
Frank Mancini, P.G., MBA

Assistant Superintendent
John Flynn

ANNUAL WATER SUPPLY REPORT **MAY 2020**

Dear Water District Resident:

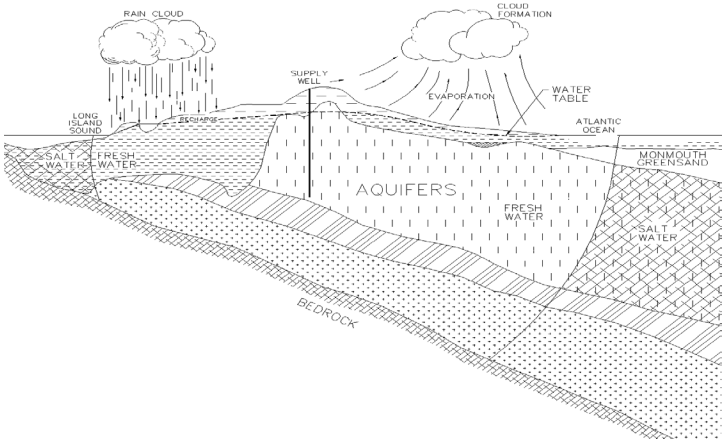
We are pleased to present to you the Riverhead Water District's 2019 Consumer Confidence Report/Annual Water Supply Statement. As shown in this report, the Riverhead Water District continues to provide the residents with a source of water for all of our domestic needs which is reliable and of high quality. Our water is continuously tested to ensure that it meets all drinking water standards. As the Town grows, so does our Water District. In order to meet their increasing water demands, the District is investigating additional source and storage points and hopes to implement these new facilities in the coming year. Simultaneously, we encourage all of our residents to conserve water so we can limit the expense connected with the construction of new additional facilities just to meet the water demands for the few peak days during the summer.

Our Water District staff works hard to make sure every resident has clean water every time he or she turns on the tap. Additional information about our Water District and our water supply can be found on our Town website, **www.townofriverheadny.gov.**

SOURCE OF OUR WATER

The source of water for the District is groundwater pumped from seventeen (17) active wells located throughout the community that are drilled into the Glacial and Magothy aquifers beneath Long Island, as shown on the adjacent figure. Generally, the water quality of the aquifer is good to excellent, although there are localized areas of contamination.

The population served by the Riverhead Water District during 2019 was approximately 35,000. The total amount of water withdrawn from the aquifer in 2019 was 2.49 billion gallons, of which approximately 95.2 percent was billed directly to the residents of the District.



THE LONG ISLAND AQUIFER SYSTEM

INFORMATION ABOUT OUR DRINKING WATER

This report is required to be available to all residents of our District in compliance with Federal and State regulations. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. The Riverhead Town Board and the District employees are committed to ensuring that you and your family receive the highest quality water.

COST OF WATER

The District is utilizing a unit price billing schedule with the consumer being billed at a rate of $10.90 for the first 4,000 gallons per quarter plus $1.73 for each additional 1,000 gallons for the District's 3/4 inch service size. The billing rate is $19.90 per quarter for first 9,000 gallons for 1 inch service size plus $1.73 for each additional 1,000 gallons. For additional rates and services, please go to the Town's website.

CONTACTS FOR ADDITIONAL INFORMATION

We are pleased to report that our drinking water is safe and meets all Federal and State requirements with the exception of iron and manganese. If you have any questions about this report or concerning your water utility, please contact Water District Supt. Frank Mancini at (631) 727-3205 or the Suffolk County Department of Health Services at (631) 852-5810. Water District issues are normally discussed at Town Board meetings. Log on to the website at www.townofriverheadny.gov for dates, times and locations or call (631-727-3205).

The Riverhead Water District monitors for different parameters and contaminants in your drinking water as required by Federal and State laws. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk. For more information on contamination and potential health risks, please contact the USEPA Safe Drinking Water Hotline at 1-800-426-4791 or www.epa.gov/safewater.

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants.

In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water suppliers. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to disease-causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbial pathogens are available from the Safe Drinking Water Hotline (1-800-426-4791).

The USEPA established a Lead and Copper Rule that requires all public water suppliers to sample and test for lead and copper at the tap. The first testing was required in 1992. All results were excellent indicating that the District's corrosion control treatment program was effective in preventing the leaching of lead and copper from your home's plumbing into your drinking water. The same testing was last conducted in 2019 with the same excellent results. The next round of sampling will occur in 2022.

WATER CONSERVATION MEASURES

The aquifer from which the Water District draws water from has more than enough water to meet current demands. However, the increasing demand for water makes practicing water conservation efforts key to maintaining the integrity of the aquifers for future generations.

The District has implemented its own water conservation efforts in recent years including conducting leak studies on all of its distribution mains, identifying lost water through broken or under recording meters, and promoting an ODD/EVEN irrigation schedule.

Most of the water utilized by residents in the peak season is for irrigation purposes. The District requests that all residents be cognizant of irrigation uses by installing rain or soil moisture sensors, checking systems for broken heads or leaks, assuring we are watering lawns and not roads, planting drought-resistant landscaping and by not over watering. Addressing these simple steps will not only conserve water, but same money as well.

WATER QUALITY

In accordance with State regulations, the Riverhead Water District routinely monitors your drinking water for numerous parameters. We test your drinking water for coliform bacteria, turbidity, inorganic contaminants, lead and copper, nitrate, volatile organic contaminants, total trihalomethanes and synthetic organic contaminants. Over 135 separate parameters are tested in each of our wells numerous times per year. The table presented on page 3 depicts the quality of your drinking water. It should be noted that many of these parameters are naturally found in all Long Island drinking water and do not pose any adverse health effects.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. To date, the District has not operated a well that exceeds this level. High nitrate levels in drinking water can cause blue baby syndrome. The source of the nitrates is the nitrogen in fertilizers and from on-site septic systems. If you are caring for an infant you should ask advice from your health care provider.

WATER TREATMENT

The Riverhead Water District provides treatment at all wells to improve the quality of the water pumped prior to distribution to the consumer. The pH of the pumped water is adjusted upward to reduce corrosive action between the water and water mains and in-house plumbing by the addition of lime. The water is also chlorinated with calcium hypochlorite to protect against the growth of bacteria in the distribution system. The District also adds iron sequestering agents at all wells as part of the District's overall water treatment program to supplement corrosion control and to maintain iron in the soluble state to minimize water stains on laundry and plumbing fixtures.

The District operates an ion exchange treatment system for the removal of perchlorate at their Plant No. 16 site. Perchlorate is a man-made substance most often associated with the production of fertilizers. Although the USEPA has not set a drinking water standard for perchlorate, the NYS Dept. of Health has enacted an action level of 18 ug/l. As the perchlorate level at Plant No. 16 has never exceeded the action level, the District continues to treat this well in the interest of its consumers. Other sources are not impacted or contain low levels of perchlorate.

2019 DRINKING WATER QUALITY REPORT - TABLE OF DETECTED PARAMETERS

Contaminants	Violation (Yes/No)	Date of Sample	Level Detected (Maximum Range)	Unit Measurement	MCLG	Regulatory Limit (MCL or AL)	Likely Source of Contaminant
Inorganic Contaminants							
Lead	No	June/August 2019	ND - 8.5 1.0[1]	ug/l	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	No	June/August 2019	ND - 0.31 0.2[1]	mg/l	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits
Arsenic[2]	No	10/11/19	ND - 5.6	ug/l	n/a	MCL = 10	Naturally occuring
Barium	No	09/06/19	ND - 0.07	mg/l	2	MCL = 2.0	Naturally occurring
Fluoride	No	09/11/19	ND - 0.13	mg/l	n/a	MCL = 2.2	Naturally occurring
Ammonia (As Nitrogen)	No	09/06/19	ND - 0.19	mg/l	n/a	MCL = 5.0	Runnoff from fertilizer and leaching from septic tanks and sewage
Sodium	No	09/06/19	4.6 - 22.3	mg/l	n/a	No MCL[3]	Naturally occurring
Chloride	No	09/06/19	3.6 - 37.1	mg/l	n/a	MCL = 250	Naturally occurring
Iron	Yes[4]	09/06/19	ND - 900	ug/l	n/a	MCL = 300	Naturally occurring
Manganese	No[5]	05/28/19	ND - 270	ug/l	n/a	MCL = 300[6]	Naturally occurring
Nitrate	No	05/24/19	ND - 6.1	mgl	10	MCL = 10[7]	Runnoff from fertilizer and leaching from septic tanks and sewage
Sulfate	No	09/11/19	ND - 79.0	mg/l	n/a	MCL = 250	Naturally occurring
Nickel	No	09/06/19	ND - 2.4	ug/l	n/a	MCL = 100	Naturally occuring
Volatile Organic Contmainants							
1,2,3-Trichloropropane	No	09/11/19	ND - 0.58	ug/l	n/a	MCL = 5.0	Industrial discharge
Disinfection By-Products							
Total Trihalomethanes (THMs)	No	07/08/19	ND - 5.5	ug/l	0	MCL = 80	Disinfection By-Products
Unregulated Contaminants							
Perchlorate	No	10/11/19	ND - 6.4	ug/l	n/a	AL = 18[8]	Fertilizers
1,4-Dioxane	No	02/27/19	ND - 0.094	ug/l	n/a	MCL = 50	Industrial discharge[9][10]
Perfluoroheptanoic Acid	No	05/24/19	ND - 2.96	ng/l	n/a	MCL = 50,000	Industrial discharge
Perfluorooctanoic Acid (PFOA)	No	02/27/19	ND - 8.43	ng/l	n/a	HA = 70[11]	Industrial discharge
Perfluorobutanesulfonic Acid	No	03/29/19	ND - 3.43	ng/l	n/a	MCL = 50,000	Industrial discharge
Perfluorohexanesulfonic Acid	No	02/27/19	ND - 5.96	ng/l	n/a	MCL = 50,000	Industrial discharge
Perfluorooctanesulfonic Acid (PFOS)	No	02/27/19	ND - 15.9	ng/l	n/a	HA = 70[11]	Industrial discharge
Hexavelent Chromium	No	09/11/19	ND - 2.6	ug/l	n/a	No MCL[12]	Natural deposits
Radionuclides							
Gross Alpha	No	07/19/17	ND - 2.24	pCi/L	n/a	MCL = 15	Naturally occurring
Radium 226 & 228 Combined	No	07/19/17	0.53 - 0.87	pCi/L	n/a	MCL = 5	Naturally occurring

continued on page 4

2019 DRINKING WATER QUALITY REPORT - TABLE OF DETECTED PARAMETERS (cont'd.)

Contaminants	Violation (Yes/No)	Date of Sample	Level Detected (Maximum Range)	Unit Measurement	MCLG	Regulatory Limit (MCL or AL)	Likely Source of Contaminant
Unregulated Contaminant Monitoring Rule UCMR4[13]							
Manganese	No	12/18/19	0.90 - 160.0	ug/l	n/a	MCL = 300[6]	Naturally occurring
Bromochloroacetic Acid	No	12/17/19	ND - 0.42	ug/l	n/a	MCL = 60	By-Product of drinking water chlorination
Dibromoacetic Acid	No	12/17/19	ND - 0.38	ug/l	n/a	MCL = 60	By-Product of drinking water chlorination
Dichloroacetic Acid	No	12/17/19	ND - 0.43	ug/l	n/a	MCL = 60	By-Product of drinking water chlorination
Bacteriologicals							
Total Coliform[14]	No	07/17/19 09/25/19	2 positive out of 480 annual samples	Positive or Negative	n/a	MCL - Positive results in more than 5% of the montly samples	Commonly found in the environment
E.coli[14]	No	07/17/19	1 positive out of 480 annual samples	Positive or Negative	n/a	MCL - Positive results plus positive repeat samples	Commonly found in the environment, sewage

Definitions:

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

Maximum Contaminant Level Goal (MCLG) - 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.

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

Health Advisory (HA) - An estimate of acceptable drinking water levels for a chemical substance based on health effects information; a health advisory is not a legally enforceable Federal standard, but serves as technical guidance to assist Federal, State and local officials.

Milligrams per liter (mg/l) - Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l) - Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Non-Detects (ND) - Laboratory analysis indicates that the constituent is not present.

pCi/L - pico Curies per Liter is a measure of radioactivity in water.

[1] - During 2019 we collected and analyzed 32 samples for lead and copper. The 90% percentile is presented as the maximum result. If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and oung children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. Riverhead Water District 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 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 (1-800-426-4791) or at *http://www.epa.gov/safewater/lead*.

[2] – NYS and EPA have promulgated a drinking water arsenic standard of 10 parts per billion. While your drinking water meets the standard for arsenic, it does contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effect on low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

[3] - No MCL has been established for sodium. However, 20 mg/l is a recommended guideline for people on high restricted sodium diets and 270 mg/l for those on moderate sodium diets.

[4] - The District operates three wells, Nos. 2, 4-1 and 4-2, that exceed the MCL for iron. Iron is essential for maintaining good health. However, too much iron can cause adverse health effects. Drinking water with very large amounts of iron can cause nausea, vomiting, diarrhea, constipation and stomach pain. These effects usually diminish once the elevated iron exposure is stopped. A small number of people have a condition called hemochromatosis, in which the body absorbs and stores too much iron (sometimes called "iron overload") and should be aware of their overall iron intake. The New York State standard for iron in drinking water is 0.3 milligrams per liter, and is based on iron's effects on the taste, odor and color of the water. People with hemochromatosis may be at greater risk for health effects. The District adds a sequestering agent to the water to a maintain iron in a soluable state to minimize discolored water and staining of laundry.

[5] - Manganese is a common element in rocks, soil, water, plants, and animals. Manganese occurs naturally in water after dissolving from rocks and soil. Contamination of drinking water may occur if manganese gets into surface or groundwater after dissolving from rocks and soil. It may also occur if manganese gets into surface or groundwater after improper waste disposal in landfills or by facilities using manganese in the production of steel or other products.

Manganese is an essential nutrient that is necessary to maintain good health. However, exposure to too much manganese can cause adverse health effects. There is some evidence from human studies that long-term exposure to manganese in drinking water is associated with nervous system effects in adults (e.g., weakness, stiff muscles and trembling of the hands) and children (learning and behavior). The results of these studies only suggest an effect because the possible influences of other factors were not adequately assessed. There is supporting evidence that manganese causes nervous system effects in humans from occupational studies of workers exposed to high levels of manganese in air, but the relevance of these studies to long term drinking water exposure is less clear because the exposures were quite elevated and by inhalation, not by ingestion.

[6] - If iron and manganese are prsent, the total concentration of both should not exceed 500 ug/l.

[7] - Water from some of the wells within the Riverhead Water District have a slightly elevated nitrate level. This level is below the maximum contaminant level of 10.0 parts per million. 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. The source of the nitrates is the nitrogen in fertilizers and from on-site septic systems. If you are caring for an infant, you should ask advice from your health care provider.

[8] - Perchlorate is an unregulated contaminant. However, the NYS Dept. of Health has established an action level of 18 ug/l.

[9] - 1,4-Dioxane -The New York State (NYS) proposed MCL for 1,4-Dioxane is 1 part per billion(ppb).

[10] - It is used as a solvent for cellulose formulations, resins, oils, waxes and other organic substances. It is also used in wood pulping, textile processing, degreasing, in lacquers, paints, varnishes, and stains; and in paint and varnish removers.

[11] - PFOS has been used to make carpets, leathers, textiles, fabrics for furniture, paper packaging, and other materials that are resistant to water, grease, or stains. It is also used in firefighting foams at airfields. Many of these uses have been phased out by its primary U.S. manufacturer; however, there are still some ongoing uses.

[12] - MCL of 100 ug/l is for Total Chromium. There is no MCL for Hexavalent Chromium.

[13] - UCMR4 - Unregulated Contaminant Monitoring Rule 4 is a Federal water quality sampling program where water suppliers sample and test their source water for 1 year. Results will be used by the USEPA to determine if the contaminants need to be regulated in the future.

[14] - Total coliform bacteria was detected in 2 out of 480 routine compliance samples collected within our distribution system. The two postive samples occurred in July and September 2019. No postive samples were detected for the rest of the year. All repeat samples were negative for bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. The E.coli sample result did not test positive on resampling.

WATER SYSTEM IMPROVEMENTS

The Water District has completed the construction of a 2.0 million gallon concrete ground storage tank and booster pump station at their Tuthills Lane well field. This tank will enable the District to better meet peak demands in the eastern portion of Town as well as provide greater flexibility when rehabilitating their other existing tanks. Other completed projects include installation of a mixing system at their Palane Road storage tank and upgrades to wells on Pulaski Street and Osborn Avenue. The District has also commenced with projects to upgrade aging infrastructure at wellfields on Osborn Avenue and Columbus Street. This coming year the District has a number of potential projects on the table including installation of test wells, plant upgrades and media replacement for their perchlorate filter.

The Riverhead Water District normally conducts over 1,000 water quality tests throughout the year, testing for over 130 different contaminants which have been undetected in our water supply including:

Cadmium	Aldicarb Sulfone	Carbon Tetrachloride
Mercury	Aldicarbsulfoxide	1,1-Dichloropropene
Selenium	Aldicarb	1,2-Dichloroethane
Silver	Total Aldicarbs	Trichloroethene
Color	Oxamyl	1,2-Dichloropropane
Calcium	Methomyl	Dibromomethane
Odor	3-Hydroxycarbofuran	Trans-1,3-Dichloropropene
Magnesium	Carbofuran	cis-1,3-Dichloropropene
Detergents (MBAS)	Carbaryl	1,1,2-Trichloroethane
Free Cyanide	Glyphosate	Tetrachloroethene
Zinc	Diquat	1,3-Dichloropropane
Antimony	Endothall	Chlorobenzene
Beryllium	1,2-Dibromoethane (EDB)	1,1,1,2-Tetrachloroethane
Thallium	1,2-Dibromo-3-Chl.Propane	Bromobenzene
Lindane	Dioxin	1,1,2,2-Tetrachloroethane
Heptachlor	Bromodichloromethane	2-Chlorotoluene
Aldrin	Dibromochloromethane	4-Chlorotoluene
Heptachloro Epoxide	Gross Beta	1,2-Dichlorobenzene
Dieldrin	Dichlorodifluoromethane	1,3-Dichlorobenzene
Endrin	Chloromethane	1,4-Dichlorobenzene
Methoxychlor	Vinyl Chloride	1,24-Trichlorobenzene
Toxaphene	Bromomethane	Hexachlorobutadiene
Chlordane	Chloroethane	1,2,3-Trichlorobenzene
Total PCBs	Trichlorofluoromethane	Benzene
Propachlor	Chlorodifluoromethane	Toluene
Alachlor	1,1-Dichloroethene	Ethylbenzene
Simazine	Methylene Chloride	M,P-Xylene
Atrazine	Trans-1,2-Dichloroethene	alpha-BHC
Metolachlor	1,1-Dichloroethane	Butylated Hydroxyanisole
Metribuzin	cis-1,2-Dichloroethene	Chlorpyrifos
Butachlor	2,2-Dichloropropane	Dimethipin
2,4-D	Bromochloromethane	Ethoprop
2,4,5-TP (Silvex)	1,1,1-Trichloroethane	Germanium
Dinoseb	Methyl Tert.Butyl Ether (MTBE)	n-Butanol
Dalapon	N-Butylbenzene	O-Toluidine
Picloram	4-Isopropyltoluene (P-Cumene)	Oxyfluorfen
Dicamba	Sec-Butylbenzene	Permethrin
Pentachlorophenol	1,2,4-Trimethylbenzene	Profenofos
Hexachlorocyclopentadiene	Tert-Butylbenzene	Quinoline
bis(2-Ethylhexyl)adipate	1,3,5-Trimethylbenzene	Tebuconazole
Trihalomethanes (THMs)	N-Propylbenzene	Tribufos
Hexachlorobenzene	Isopropylbenzene (Cumene)	2-methoxyethanol
Benzo(A)Pyrene	Styrene	2-propen-1-ol
Total Coliform	O-Xylene	

SOURCE WATER ASSESSMENT

The NYSDOH has completed a source water assessment for this system, based on available information. Known and possible contamination sources to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility of a water supply well to contamination is dependent upon both the presence of potential sources of contamination within the well's contributing area and the likelihood that the contaminant can travel through the environment to reach the well. The susceptibility rating is an estimate of the potential for contamination of the source water. It does not mean that the water delivered to consumers is, or will become, contaminated. (See section "Water Quality" for a list of contaminants that have been detected.) The source water assessments provide resource managers with additional information for protecting source waters into the future.

As mentioned before, our water is derived from 17 active wells. The source water assessment has rated most of the wells as having a high susceptibility to industrial solvents, pesticides and nitrates and microbial contamination. The elevated susceptibility ratings are due primarily to the various land uses and their related point sources of contamination in the assessment area. The land uses include unsewered commercial, industrial and residential, as well as agricultural land use. While the source water assessment rates our well as being susceptible to microbials, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination.

A copy of the assessment, including a map of the assessment area, can be obtained by contacting the Water District.