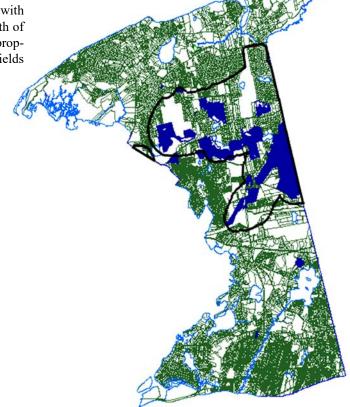
# **Dennis Water District** Town of Dennis 2021 Annual Water Quality Report MA Public Water Supplier ID # 4075000

Dear Customer: We are pleased to provide you with our latest water quality summary covering the past year. The Safe Drinking Water Act (SDWA) requires that utilities issue an annual "Annual Water Quality Report" to customers in addition to other notices that may be required by law. This report details our sources of water, what it contains, and the problems and risks our testing and treatments are designed to prevent. The Dennis Water District is committed to providing you with the safest and most reliable water supply possible. Informed consumers are our best allies in maintaining safe drinking water.

Our water supply meets all state and federal water quality standards. We encourage public interest and participation in our community's decisions affecting drinking water. The Board of Water Commissioners meets regularly on the fourth Thursday of each month at 10:00AM in the Stone Hearing Room at the Dennis Town Hall, 685 Route 134, South Dennis. The public is welcome to attend. Meetings are subject to change, so please call ahead or visit our website at www.denniswater.org. You are also invited to express your comments or concerns by phone, mail or email. Meetings are generally televised live and replayed on local Channel 18 on the Town of Dennis website. A link to On Demand Videos of meetings are available on our website, also.

Water Sources In 2021, we supplied the properties in Dennis with 1,119879,100 gallons of groundwater pumped from 22 wells all located north of the Route 6. The wells are situated on more than 1086 acres of watershed property owned or protected by the District. The following is a list of well fields including the wells that operate in those fields.

Wells 1, 2, 3, 12, 23	Old Chatham Road	2,100 GPM
Wells 4, 6, 11, 22	Old Bass River Road	1,600 GPM
Well 5	Route 134	500 GPM
Wells 7, 8, 10	Airline Road	1,300 GPM
Well 9	Grassy Pond Drive	600 GPM
Wells 14, 15	Bakers Pond Road	1,150 GPM
Well 16	Timber Lane	450 GPM
Well 18	Hokum Rock Road	700 GPM
Wells 19, 20	Setucket Road	1,400 GPM
Main Station	80 Old Bass River Road	700 GPM
Well 21	Route 134	700 GPM



Emergency backup supplies would come from surrounding towns if mutual aid was needed. We have three interconnections with the Town of Yarmouth, three with the Town of Harwich and one with the Town of Brewster.

**Dennis Source Water Assessment** This assessment was completed by DEP to delineate the boundaries of those areas providing source water to our public water supply wells and identify, to the extent practicable, the origins of any future contaminants in the delineated area. No areas of contamination were found. The conclusions of the report found that the District has done a good job protecting its sources by acquiring or permanently restricting 1077 acres of watershed, working with the Board of Health to update our Wellhead Protection District and sponsoring yearly Household Hazardous Waste Collection Days. The report recommends that the District continue to educate consumers, through its newsletters, about source protection and to work with local businesses to ensure proper storage and handling of hazardous materials. The zones of contributions to our wells are outlined on the map above. A larger more detailed map is available at the Town of Dennis. Additional information about the Source Water Assessment can be obtained from the Massachusetts Department of Environmental Protection. The Dennis Water District's assessment begins on page 293. Click here to open the file at MassDEP.

**Memberships** The District is a member of the following organizations: American Water Works Association, Massachusetts Water Works Association, New England Water Works Association, Plymouth County Water Works Association and Barnstable County Water Utilities Association.

**Our Goal** The District has provided water and water related services to consumers within the Town of Dennis for more than seventy years. We are committed to supplying our current and future customers with a safe and adequate water supply for fire protection and domestic use at a reasonable cost. We will take all practical measures to protect the water system's assets.

**How To Read This Table** The table on the adjacent page shows the results of our water quality analyses. Every regulated contaminant that we detected in the water, even the most minute traces, is listed here. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the highest level actually detected, the highest to the lowest ranges detected from all our wells, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. Definitions of MCL and MCLG are important.

- (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 disinfectant (chlorine) allowed in drinking water.
- (MRDLG) Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known expected risk to health.
- **(SMCL)** Secondary Maximum Contaminant Level: These levels of a contaminant are developed to protect against the aesthetic qualities of drinking water and are not health based.
- (ORSG) Mass. Office of Research and Standards Guideline: This is the concentration of a chemical in drinking water, at or below, which adverse, non-cancer health affects are unlikely to occur after chronic (lifetime) exposure.

**Water-Quality Table Notes** Lead and copper are elements that occur naturally in the environment. When these two elements are found in our drinking water, it is most often the result of water interacting with materials found in plumbing, not from the water source. Since 1993, the water has been treated with potassium hydroxide to raise the pH from 5.5 to 7.0. The reason for this is to minimize the corrosion of plumbing and the consumer's exposure to lead and copper. Due to the effectiveness of this treatment, the District has been placed on a reduced monitoring program. Since treatment began, we continue to meet the requirements of the Safe Drinking Water Act.

- <sup>1</sup>Chloroform occurs naturally here on Cape Cod. Future studies by DEP are planned to determine the reasons for this.
- <sup>2</sup> Sodium can occur naturally and can also be attributed to road runoff.
- <sup>3</sup> The aesthetic limits for iron and manganese are .3 ppm and .05 ppm respectively.

In 2015, the District completed a project that brought two more wells with elevated levels of iron and manganese into the two treatment plants, increasing their capacity to 5 MGD each. Levels above the recommended limits have been known to cause discoloration, taste and odor problems. These two elements have been present in our water system as long as the District has been pumping water. We continue to monitor the iron and manganese in our wells. The District has two iron and manganese removal plants to improve the aesthetics and water quality concerns associated with these minerals in the distribution system. We are proud to say they are working well and conditions in the system continue to improve.

### **PFAS6 Sample Results**

The District sampled for PFAS6 in each quarter of 2021 as required in the new regulations. The South Iron and Manganese Removal Plant had two "No Detections" and two detections. One detection was at 4.7ppt (parts per trillion) and the other at 2.1ppt. Both detections were below the standard of 20ppt. It was determined through further testing that the detections were originating from Wells 5 and 16 which were also below the standard of 20ppt. After consultations with MassDEP, it was determined there was no drinking water violation and the District will be required to continue further sampling to monitor the detection levels.

The District has a unique situation at the South Plant where the water from different wells is combined as it enters the plant which in turn lowers the PFAS6 detection level as it leaves the treatment facility. This is a simple and accepted treatment option at this point. The District will continue to monitor and will provide public updates as important information becomes available.

### What is PFAS?

PFAS6 includes perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluorodecanoic acid (PFDA) and perfluoroheptanoic acid (PFHpA). PFAS are man-made chemicals that have been used in the manufacturing of certain fire-fighting foams, moisture and stain resistant products, and other industrial processes. These chemicals are found in everyday commonly used products.

For more information - click on the following topics:

**MassDEP Fact Sheet - Questions and Answers for Consumers** 

MassDEP Fact Sheet - Home Water Treatment Devices - Point of Entry and Point of Use Drinking Water Treatment

<u>CDC ATSDR Information on PFAS for consumers and health professionals</u> <u>Massachusetts Department of Public Health information about PFAS in Drinking Water</u> **Lead & Copper** Lead and copper samples are collected on a three-year cycle. They were collected during 2020. The District collected 30 samples from homes and 6 samples from schools. A complete list of all results from this testing by the District in 2020 is available upon request or by visiting the District office during regular business hours: Monday through Friday 8 a.m. to 4 p.m. The following is an education statement required under EPA regulations:

"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. The Dennis 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 or at https://www.epa.gov/ground-water-and-drinking-water/ basic-information-about-lead-drinking-water

**Total Coliform** The Total Coliform Rule requires systems to test for bacteria on a regular monthly schedule based on the population served. Coliforms are bacteria that are naturally present in the environment and are not harmful themselves; however, their presence can be an indicator that other potentially harmful bacteria may also be present.

#### **Emergency Response Plan**

The District maintains an Emergency Response Plan (ERP) which meets Massachusetts Departments of Environmental regulations 310 CMR 22.04(13) and Massachusetts Guidelines and Policies for Public Water Suppliers. It serves as a guide for the District in the case of an emergency.

As part of the ERP, District employees receive training to strengthen the District's ability to quickly identify and respond to emergencies. The training sessions earn education credits for our employees that hold state drinking water operator licenses.

The District partners with the Town of Dennis to provide an emergency calling service, also known as *Reverse 9-1* -1." The service enables the District to notify residents and businesses of water emergencies such as a "boil water" order or a major water main break. Information about *CodeRED* can be found on the District's website or by calling the District office at 508-398-3351.

The goal of the ERP is to protect the public health of our customers by being prepared to respond immediately to a variety of events that may result in contamination of the water supply or disruption of water service.

#### WATER EMERGENCY NOTIFICATION SYSTEM

Dennis residents and businesses are encouraged to enter their contact information for home, business, and cell phones so they can receive public notifications of events and emergencies. This system is shared by the **Dennis Police Department and the Dennis Water District** for storms, chemical spills, evacuations, water system problems and other alerts. It is capable of targeting calls to only affected areas as it relates to water main breaks or interruption of service.

It is especially important to register if you have unlisted home number, cell phones, TDD/TTY or VOIP. Please take just a few minutes and make sure your number(s) are registered by calling: <u>774-352-1474</u> or online at <u>www.town.dennis.ma.us/dennis-police</u> scroll down about mid-way on left side of page.

## Key to Table

AL = Action Level MCL = Maximum Contaminant Level MCLG = Maximum Contaminant Level Goal MFL = Million Fibers per Liter MRDL = Maximum Residual Disinfectant Level pCi/l = picocuries per liter (a measure of radioactivity) ppm = parts per million or milligrams per liter (mg/l) ppb = parts per billion, or micrograms per liter (µg/l) ppt = parts per trillion, or nanograms per liter ND = not detected

Image: Sector S	Contaminant	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range Lowest to Highest	Major Sources	Violation
Nome     Nome <t< td=""><td></td><td></td><td></td><td></td><td>Inorganic C</td><td>ontaminants</td><td></td><td></td><td></td></t<>					Inorganic C	ontaminants			
aire in the set of the set	Vitrate	Mar - June	ppm	10	10	22	ND - 2.2	septic tanks, sewage; Erosion of natural	NO
Some spin-schemigModeModeModeModeModeModeModeSatim 200FG2LFG2LSBBB	Barium	June	ppm	2	2	0.032	.0079032		NO
tation 28200900509.7719.77Percend related dependsMO4445 dependenciesAquelppb60NA12ND-12By enclud of driving weter choneationNO6000 dependenciesAquelppb60NA104.3-10By enclud of driving weter choneationNO7000 TokinaX00ppm4NA0.216620Polded of driving weter choneationNO7000 TokinaX00ppm4NA0.216620Solarge fram nood preserving factoresNO7000 TokinaNoppm60.35ND-652Solarge fram nood preserving factoresNO7000 TokinaNoppm60.35ND-652Solarge fram nood preserving factoresNO7000 					Radioactive	Contaminants			
Control     Data Part Detailed in Contaminants     Contaminant     Contaminant     Contaminant     Contaminant     Contaminant     No       Statistication     August     Spb     6.0     MA     1.12     NO-1.2     Pyrocled of arriting water chormation     NO       Statistication     20.1     gpm     4.0     0.21     0.4     0.1     0.4     0.1     9.7     9.7     0.0     1.0     1.0     0.0     0.2.1     Product of arriting water chormation     NO       Statistication     No     Spb     6     0     0.51     NO - 50     Deckarge from mode thormation     NO       V2E Hydrol (phthalace)     No     Spb     6     0     0.51     NO - 477     Deckarge from mode thormation     NO       TFASS     20.21     PPT     ZD     QD     4.7     NO - 477     NO - 477     Product of deminang water chormation     NO       TFASS     20.21     PPT     ZD     QD     4.7     NO - 477     NO - 477     Product of arching water chormation     NO     Product of arching water chormation </td <td>Gross Alpha Activity</td> <td>2020</td> <td>pCi/L</td> <td>15</td> <td>0</td> <td>2.900</td> <td>ND - 2.9</td> <td></td> <td>NO</td>	Gross Alpha Activity	2020	pCi/L	15	0	2.900	ND - 2.9		NO
Hole   August   inpo   0.0   NA   1.2   ND-1.2   By product of driving water chlomation   NO     THM   August   inpo   8.0   NA   10   4.3.10   By product of driving water chlomation   NO     Stoline   2.21   0.00   4.4   NA   0.21   0.8.21   Product of driving water chlomation   NO     Stoline   2.221   0.00   1   0.0   0.052   NO-162   Dischage from noting water chlomation   NO     Dischage from noting water chlomation   NO   0.052   NO-162   Dischage from noting water chlomation   NO     Dischage from noting water chlomation   NO   0.052   NO-162   Dischage from noting water chlomation   NO     Dischage from noting water chlomation   NO   2.21   PF1   2.20   Q   4.47   NO-47   Stolade from noting water chlomation   NO     PASS   2.221   PF1   2.20   Q   4.47   NO-47   Stolade from noting water chlomation   NO     PASS   2.221   PF1   2.20   Q   2.47   NO-47   Stolade from noting water chlomation	Radium 228	2020	pCi/L	5	-		.1877	Erosion of natural deposits	NO
isolatole.chash isolatole.chash official containable (initial containable)ppp00NA1.2ND-1.2ppp (pp (pp (pp (pp (pp (pp (pp (pp (pp	1445	1	[		Disinfection	Contaminants	[		
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New     ppb     1     0     0.062     ND - 052     Discharge from sood presence (actions)     NO       Discharge from sood presence (pressors)     NO     3.51     ND - 351     Discharge from sood pressors from sood pressors     NO       Discharge from sood pressors     NO     3.51     ND - 351     Discharge from sood pressors from find taread damade     NO       FAS9     2021     PPT     203     0     4.7     ND - 47     Discharge from sood pressors from find taread damade     NO       FAS9     2021     PPT     203     0     4.7     ND - 47     Discharge from sood pressors from find taread damade     NO       FAS9     2021     PPT     203     0     4.7     ND - 47     Discharge from sood pressors from find taread damade     NO       FAS9     2021     PPT     203     0     4.7     ND - 47     Discharge from sood pressors from sood pressors from find taread damade     NO       Education     Date Tested     Unit     SMC     GRS S     Average Dischard from sood pressors from sood pressors from sood pressors from sood pressors from sood pressood pressors from sood pressood pressors from sood pressoo	Chlorine	2021	ppm	4	NA	0.21	.0821	Product of drinking water chlorination	NO
Nov     pp     6     0     3.51     NO-3.51     Discharge from nubber and chemical materina. Address     NO       553.90     2021     PPT     20     0     4.7     NO-4.7     Discharge from nubber and chemical materina. Address     NO       553.90     2021     PPT     20     0     4.7     NO-4.7     Discharge and emissions from industral and materina. Address     NO       553.90     2021     PPT     20     0     4.7     NO-4.7     Discharge from nubber and chemical individual discurstom and dis- materina. Address on the fighting from the period on oruse of theme FFAS individual sources and discurstom materina. Address on the fighting frame theme FFAS such as the fighting frame theme frame frame theme frame frame theme frame frame theme frame frame theme frame					Synthetic Orga	nic Contaminants			
ALC: Employing instance     Not     Not     Not     Not     Not     Not       FAGES     2021     PPT     20     0     4.7     Not -3.5     Inclusion     Discharges and emissions from industrial and inclusion of manual-drug sources as exceed with the production of manual-drug sources as exceed with the production of materials. Additional sources in date the end of each of addition date the end of each of additional sources in da	Pentachlorophenol	Nov	ppb	1	0	0.052	ND052		NO
PFASB     2021     PPT     2021	DI(2-Ethylhexyl)phthalate	Nov	ррь	6	0	3.51	ND - 3.51	~	NO
PFASE     2021     PPT     20     0     4.7     ND-4.7     Discharges and emissions from industrial and manufacturing sources associated with the production or used there PFAS industing production or used there is and adsociated production or used there is an effecting therm beam of drawing water divionation in the intervalue of periods of drawing water divionation is an effecting to addition of the periods of drawing water divionation is an effecting to addition of the effecting therm is an effecting to addition of the effecting to additin the effecting to addition of the effecting to additin the effe				Per- a	nd Polyfluoroal	kyl (PFAS) Substan	ces	Iduones	
Contaminant     Date Tested     Unit     SMCL     ORSIG     Average Detected Level     Range Lowestio Highest     Sources     Violation       Chordorn <sup>1</sup> June     ppb     NA     70     1.7     ND-16     By-product of driving water chionnation     NO       Shordobromethane     June     ppb     NA     90     0.07     ND-52     bed as a free-dinguching field an explosive suppressant, and as a solvent in the manufacturing of periodses     NO       Shordobromethane     June     ppb     NA     NA     0.02     ND-10     By-product of driving water chionnation     NO       Shordobromethane     June     ppb     NA     NA     0.02     ND-10     By-product of driving water chionnation     NO       Shordobrom     June     ppb     NA     20     52     72-52     Rundi framuse of saiton roads     NO       Sodum <sup>2</sup> Date Tested     Unit     SMCL     Hadisory     Keeless     Range Lowesto     Major Sources     Violation       Sodum <sup>2</sup> Date Tested     Unit     SMCL     Hadisory     Keeless     Range	PFAS6	2021	РРТ	20	0	4.7	ND - 4.7	and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing	NO
ContaminantDate reasesUnitSNULOKSGLevelHighestSourcesViolationChorodom*JuneppbNA701.7ND - 18By-product of driving water chiomationNOStornochlorome/haneJuneppbNA900.07ND - 52explosive suppressint, and as solvent in the manufacturing of pesticidesNOChorodbrorome/haneJuneppbNA900.07ND - 52explosive suppressint, and as solvent in the manufacturing of pesticidesNOStornochrome/haneJuneppbNANA0.02ND - 10By-product of driving water chiomationNOStornochrome/haneJuneppbNANA0.02ND - 10By-product of driving water chiomationNOStornochrome/haneJuneppbNANA0.46ND - 42By-product of driving water chiomationNOStornochrome/haneJuneppmNA20527.2-52Run off fromuse of sait on roadsNOStornochrome/haneDate TestedUnitSMCLHealthHighest Detected LevelRange LowestroMajor SourcesViolationAdmagnese*2021ppm0.060.30.032ND - 0.32Naturally present in the environmentNOcontaminantDate TestedUnitStornochrome/sampledMCLMCLGMajor SourcesViolationLeval2020ND03015 ppb0 ppbCorrosion of household plumbin					Unregulated	Contaminants		•	
And Antime     June     ppb     NA     90     0.07     ND - 62     Used as a fire-wingushing luid, an explosive suppressent, and as a solvent in the manufacturing of pesidodes.     NO       Schorochloromethane     June     ppb     NA     NA     0.02     ND - 62     Used as a fire-wingushing luid, an explosive suppressent, and as a solvent in the manufacturing of pesidodes.     NO       Schorochromethane     June     ppb     NA     NA     0.02     ND - 1.0     By-product of drinking water chlorination     NO       Schorochromethane     June     ppb     NA     NA     0.46     ND - 4.2     By-product of drinking water chlorination     NO       Schorochromethane     June     ppm     NA     20     5.2     7.2-5.2     Run off from use of salt on roads     NO       Sodum <sup>2</sup> June     ppm     0.65     0.3     0.052     ND - 0.2     Naturally present in the environment     NO       Verganese <sup>3</sup> 2021     ppm     0.65     0.3     0.052     ND - 0.7     Naturally present in the environment     NO       ron <sup>3</sup> 2021     ppm     0.55<	Contaminant	Date Tested	Unit	SMCL	ORSG		-	Sources	Violation
Stormochioromethane     June     ppb     NA     90     0.07     ND- 62     explosive suppressiont, and as a solvent in the manufacturing of pestodes     NO       Chiorodibronomethane     June     ppb     NA     NA     0.02     ND-1.0     By-product of drinking water chiorination     NO       Bromoform     June     ppb     NA     NA     0.46     ND-4.2     By-product of drinking water chiorination     NO       Bromoform     June     ppm     NA     20     52     7.2-52     Run off formuse of sait on roads     NO       Sodium <sup>2</sup> June     ppm     NA     20     52     7.2-52     Run off formuse of sait on roads     NO       Veloation     June     ppm     0.05     0.3     0.032     ND-032     Naturally present in the environment     NO       Veloation     2021     ppm     0.3     NA     0.21     ND-7     Naturally present in the environment     NO       Lead     2020     ND     0     NO     MCL     MCLG     Major Sources     Violation <t< td=""><td>Chloroform<sup>1</sup></td><td>June</td><td>ppb</td><td>NA</td><td>70</td><td>1.7</td><td>ND - 16</td><td>By-product of drinking water chlorination</td><td>NO</td></t<>	Chloroform <sup>1</sup>	June	ppb	NA	70	1.7	ND - 16	By-product of drinking water chlorination	NO
Bromoform     June     ppb     NA     NA     0.46     ND - 42     By-product of drinking water chlorination     NO       Sodium <sup>2</sup> June     ppm     NA     20     52     7.2-52     Run off from use of salt on roads     NO       Sodium <sup>2</sup> June     ppm     NA     20     52     7.2-52     Run off from use of salt on roads     NO       Contaminant     Date Tested     Unit     SMCL     Health Advisory     Highest Detected Level     Range Lowest to Highest     Major Sources     Violation       Venganese <sup>3</sup> 2021     ppm     0.05     0.3     0.032     ND - 03     Naturally present in the environment     NO       ron <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND - 7     Naturally present in the environment     NO       ron <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND - 7     Naturally present in the environment     NO       Lead     Date Tested     90th Percentille     ¥ of Stes Exceeded Action     ¥ of Stes Sampled     MCL     MCLG     Major Sources <td< td=""><td>Bromochloromethane</td><td>June</td><td>ppb</td><td>NA</td><td>90</td><td>0.07</td><td>ND62</td><td>explosive suppressant, and as a solvent in</td><td>NO</td></td<>	Bromochloromethane	June	ppb	NA	90	0.07	ND62	explosive suppressant, and as a solvent in	NO
Sodium <sup>3</sup> June     ppm     NA     20     52     7.2-52     Run off fromuse of sait on roads     NO       Contaminant     Date Tested     Unit     SMCL     Health Advisory     Highest Detected Level     Range Lowest to Highest     Major Sources     Violation       Vanganese <sup>3</sup> 2021     ppm     0.05     0.3     0.032     ND032     Naturally present in the environment.     NO       ron <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND032     Naturally present in the environment.     NO       ron <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND7     Naturally present in the environment.     NO       contaminant     Date Tested     90th Percentile     # of Sites Level     # of Sites Sampled     # of Sites Sampled     # of Sites Sampled     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corosion of household plumbing Erosion of natural deposits and leadning of wood preservalives     NO       copper     Uset     Highest # po	Chlorodibromomethane	June	ppb	NA	NA	0.02	ND - 1.0	By-product of drinking water chlorination	NO
Contaminant     Date Tested     Unit     SMCL     Health Advisory     Highest Detected Level     Range Lowest to Highest     Major Sources     Violation       Venganese <sup>3</sup> 2021     ppm     0.05     0.3     0.032     ND032     Naturally present in the environment     NO       von <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND032     Naturally present in the environment     NO       Contaminant       Date Tested     90th Percentile     # of Sites Level     MCL Sampled     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0.3     NA     0.21     ND7     Naturally present in the environment     NO       Lead     Date Tested     90th Percentile     # of Sites Level     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corrosion of household plumbing Enosion of natural deposits and leaching of wood preservatives     NO       Copper     2020     0.24     0     30	Bromoform	June	ppb	NA	NA	0.46	ND - 4.2	By-product of drinking water chlorination	NO
Contaminant     Date Tested     Unit     SMCL     Health Advisory     Highest Detected Level     Range Lowest to Highest     Major Sources     Violation       Venganese <sup>3</sup> 2021     ppm     0.05     0.3     0.032     ND032     Naturally present in the environment     NO       von <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND032     Naturally present in the environment     NO       Contaminant       Date Tested     90th Percentile     # of Sites Level     MCL Sampled     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0.3     NA     0.21     ND7     Naturally present in the environment     NO       Lead     Date Tested     90th Percentile     # of Sites Level     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corrosion of household plumbing Enosion of natural deposits and leaching of wood preservatives     NO       Copper     2020     0.24     0     30	Sodium <sup>2</sup>	June	ppm	NA	20	52	7 2 - 52	Run off from use of salt on roads	NO
Contaminant     Date Tested     Unit     SMCL     Health Advisory     Highest Detected Level     Range Lowest to Highest     Major Sources     Violation       Alenganese <sup>3</sup> 2021     ppm     0.05     0.3     0.032     ND032     Naturally present in the environment     NO       con <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND032     Naturally present in the environment     NO       con <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND7     Naturally present in the environment     NO       con <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND7     Naturally present in the environment     NO       con <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND7     Naturally present in the environment     NO       contaminant     Date Tested     90th Percentile     # of Sites Exceeded Action Level     # of Sites Sampled     MCL (Action Level)     MCLG     Major Sources     Violation       Copper     2020     ND     0     30     1.3 ppm     1.3 ppm     corrosion					Secondary	Contaminants		I I	
con <sup>3</sup> 2021     ppm     0.3     NA     0.21     ND7     Naturally present in the environment     NO       Lead & Copper       Contaminant     Date Tested     90th Percentile     # of Sites Exceeded Action Level     # of Sites Sampled     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corrosion of household plumbing Erosion of natural deposits     NO       Copper     2020     0.24     0     30     1.3 ppm     1.3 ppm     Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives     NO       Copper     2020     0.24     0     30     1.3 ppm     Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives     NO       Contaminant     Date     Highest # positive samples taken in a month     Microbiological Contaminants Month     MCL     MCLG     Major Sources     Violation	Contaminant	Date Tested	Unit	SMCL	Health	Highest Detected	-	Major Sources	Violation
Lead     Date Tested     90th Percentile     # of Sites Exceeded Action Level     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corrosion of household plumbing Erosion of natural deposits     NO       Copper     2020     0.24     0     30     1.3 ppm     1.3 ppm     Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives     NO       Contaminant     Date     Highest # positive samples taken in a month     Highest % Nonth     MCL     MCLG     Major Sources     Violation	Manganese <sup>3</sup>	2021	ppm	0.05	0.3	0.032	ND032	Naturally present in the environment	NO
Lead     Date Tested     90th Percentile     # of Sites Exceeded Action Level     MCL (Action Level)     MCLG     Major Sources     Violation       Lead     2020     ND     0     30     15 ppb     0 ppb     Corrosion of household plumbing Erosion of natural deposits     NO       Copper     2020     0.24     0     30     13 ppm     1.3 ppm     Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives     NO       Contaminant     Date     Highest # positive samples taken in a month     Highest % Nonth     MCL     MCLG     Major Sources     Violation	ron <sup>3</sup>	2021	maa	0.3	NA	0.21	ND - 7	Naturally present in the environment	NO
Contaminant   Date Tested   90th Percentile   # of Sites Exceeded Action Level   # of Sites Sampled   MCL (Action Level)   MCLG   Major Sources   Violation     Lead   2020   ND   0   30   15 ppb   0 ppb   Corrosion of household plumbing Erosion of natural deposits   NO     Copper   2020   0.24   0   30   1.3 ppm   1.3 ppm   Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives   NO     Contaminant   Date   Highest # positive samples taken in a month   Highest % Positive in a Month   MCL   MCLG   Major Sources   Violation			P Protect					· · · · · · · · · · · · · · · · · · ·	
Contaminant   Date Tested   90th Percentile   Exceeded Action Level   Sampled   (Action Level)   MCLG   Major Sources   Violation     Lead   2020   ND   0   30   15 ppb   0 ppb   Corrosion of household plumbing Erosion of natural deposits   NO     Copper   2020   0.24   0   30   1.3 ppm   1.3 ppm   Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives   NO     Contaminant   Date   Highest # positive samples taken in a month   Highest % Nonth   MCL   MCLG   Major Sources   Violation					# of Sites				
Lead 2020 ND 0 30 15 pp0 0 pp0 of natural deposits ND   Copper 2020 0.24 0 30 1.3 ppm 1.3 ppm Corrosion of household plumbing Erosion of natural deposits and leaching of wood preservatives NO   Microbiological Contaminants   Contaminant Date Highest # positive samples taken in a month Highest % Positive in a month MCL MCLG Major Sources Violation	Contaminant	Date Tested	90th Percentile				MCLG	Major Sources	Violation
Copper   2020   0.24   0   30   1.3 ppm   1.3 ppm   of natural deposits and leaching of wood preservatives   NO     Microbiological Contaminants     Contaminant   Date   Highest # positive samples taken in a month   Highest % Positive in a Month   MCL   MCLG   Major Sources   Violation	Lead	2020	ND	0	30	15 ppb	0 ppb		NO
Contaminant     Date     Highest # positive samples taken in a month     Highest % Positive in a Month     MCL     MCLG     Major Sources     Violation		2020	0.24	0			1.3 ppm	of natural deposits and leaching of wood	NO
Total Coliform Bacteria 2021 0 positive detections in 2021 0.0% 5% 0 Naturally present in the environment NO	Copper					al Contaminants			
		Date			Positive in a	MCL	MCLG	Major Sources	Violation

## Water Treatment Techniques

<u>Corrosion Control through pH Adjustment</u> Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). The water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to add chemicals that make the water neutral or slightly alkaline. This is done by adding any one, or a combination of several, approved chemicals. The Dennis Water District adds potassium hydroxide to its water. This adjusts the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

**Iron & Manganese Removal** Iron and Manganese are often present in groundwater at levels that can discolor the water or cause it to take on unpleasant odors or tastes. Although the water may still be safe to drink, treatment is often desirable. Our treatment consists of adding sodium hypochlorite (chlorine) to the water which makes the iron and manganese precipitate out of solution and finally removed by running the water through one of our two filtration plants. Finish water results show nearly no detections of iron or manganese.

**Disinfection** The District uses sodium hypochlorite, also known as chlorine, in the distribution system. Initially it was only routinely used during our flushing program in the spring and fall of each year. Since 2007, the District has year-round chlorination of the distribution system. Chlorine is added at a rate of .5 ppm as a preventative measure to eliminate microorganisms.

All chemicals used by the District are approved for water treatment by one of the following organizations; National Sanitation Foundation International or United Laboratories, both accredited by the American National Standards Institute. Chemicals also meet performance standards established by the American Water Works Association.

**Mandatory EPA Health Statement** To ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection and the Environmental Protection Agency (EPA) prescribe limits on the amount of certain contaminants in water provided by public water systems. The Federal Food and Drug Administration and the Massachusetts Department of Public Health Regulations establish limits for contaminants in bottled water.

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or by visiting their general website at http://www.epa.gov.

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 radioactive material, and can absorb substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

(A) Microbial contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, can also come from gas stations, urban storm water runoff and septic systems.

(E) Radioactive contaminants can be naturally occurring or the result of oil and gas production and mining activities.

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, persons 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 are available from the Safe Drinking Water Hotline (800-426-4791).

Please share this information with other people who you know drink water provided by the District, especially those who may not have received this notice directly (for example, people living in apartments, nursing homes, or who visit schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail. Your cooperation by sharing this information is appreciated.

What does this all mean? *Our water supply is safe!* As you can see in our table, the District experienced no violations during 2021. The District takes more than 1,000 test samples for various contaminants each year as required by EPA and DEP. Some detections are made at low levels yet, all were within regulated limits. It is not possible to include all the contaminants that are tested for in the space provided; nor, is it required. A complete list can be obtained on request by contacting the District.

**How Will You Be Notified In An Emergency** In the event of a non-acute violation, the District must submit notices within 14 days for publication in local newspapers explaining the violation. The notices will contain important information for consumers and what actions are being taken by the District to achieve compliance.

In the event of an acute violation or an immediate emergency, the District must issue a public notice for release through *CodeRED* and electronic media (radio, television, etc.) within 24 hours. The notice must explain the situation, including actions or precautions consumers may need to take. The notice will also describe the actions being taken by the District to resolve the problem. While regulations require a 24-hour public notice, our goal is to release the information as soon as possible.

This report was prepared by David Larkowski, Superintendent of the Dennis Water District. For more information call 508-398-3351.